A MODEL FOR PARTICIPATORY EVALUATION OF ENVIRONMENTAL EDUCATION PROGRAMS: PROMOTING SUCCESS AT THE WILDLIFE CLUBS OF KENYA

By

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A model for participatory evaluation of environmental education was developed to measure impacts, improve programs, and address the lack of systematic evaluation in environmental education programs worldwide. A needs assessment conducted with 15 African countries provided a basis for developing an appropriate evaluation system for the Wildlife Clubs of Kenya, the largest grassroots conservation organization for youth in Africa.

A written 18-item survey of wildlife club programs in 15 African countries serving more than 4,700 wildlife clubs revealed that financial sustainability, increased communication, and systematic evaluation emerged as important factors for improvement of wildlife clubs throughout Africa, including the Wildlife Clubs of Kenya (WCK) program.

Seven trainings in participatory evaluation were conducted with WCK staff, teachers, and community members. The 120 participants, representing the nine WCK

regions with 790 clubs, showed a significant increase in attitudes and knowledge regarding evaluation, as reflected by mean scores before and after training.

To institutionalize evaluation at WCK, existing organizational practices were assessed and used as a foundation for developing a monitoring and evaluation system. Based on club competitions, a new evaluation initiative was launched called the WCK Incentive Program. Participants in all seven workshops identified indicators and sources of evidence for this evaluation system, which will now serve as a competition for rewarding outstanding performance within WCK.

During the trainings, staff and teachers conducted stakeholder analyses of WCK and developed key evaluation questions to involve primary stakeholders in program assessment. To collect this feedback, interviews and questionnaires were conducted with 127 stakeholders of WCK. The findings showed that student visits to the national parks were one of the most effective WCK programs, while increased awareness and interest in conservation among students was a primary impact. Constraints to programming included lack of funds and difficulty of communication with all clubs. The results also reflected the significant influence of WCK on a generation of conservationists in Kenya.

This study revealed the importance of incentives for evaluation, the need to build on existing institutional structures to promote organizational learning, and the necessity for the conservation community to commit resources to capacity building in participatory evaluation.

CHAPTER 1
INTRODUCTION

The majority of environmental education programs worldwide suffer from a lack of monitoring and evaluation of their initiatives (Jacobson and McDuff 1997; Norris and Jacobson 1998). Without documentation of impacts, the measurement and improvement of protecting biodiversity through education is intuitive in the best case scenario, and impossible in the worst. This scarcity of evaluation is critical in African countries such as Kenya, which harbor a range of natural resources and habitats--from elephants to wildebeest and semi-arid deserts to subtropical rainforests. In Kenya, revenue from wildlife tourism represents the major source of foreign currency. Habitat degradation threatens not only the natural resources that conservation programs aim to protect, but also the economic stability of the Kenyan people.

Protection of biodiversity depends on positive attitudes, knowledge, and behaviors of both individuals and institutions. Environmental attitudes are formed during childhood (Bryant and Hungerford 1979; Leeming et al. 1995; Musser and Malkus 1994; Tilbury 1994; Wilson 1996). Yet environmental education is seldom a priority in the school curriculum (Jacobson and McDuff 1998). In Africa, wildlife and environmental clubs represent the primary conservation organization for youth and have influenced a generation of conservationists across Africa. Like other environmental education programs, however, the wildlife club movement in Africa has never conducted a systematic evaluation of its effectiveness or impacts (Chadri 1997).

Evidence exists that environmental education can affect the attitudes, knowledge, and behaviors of people and result in concrete gains for conservation (Jacobson 1995a; Pomerantz and Blanchard 1992). Yet a recent report to the Biodiversity Support Program funded by the U.S. Agency for International Development concluded that traditional environmental education in Africa has failed (Byers 1995). Such findings should serve as a wake-up call to the conservation community of the urgent need for existing environmental education programs to monitor and evaluate impacts, as well as factors leading to success. Without evaluation, such programs face the risk of replicating failure, rather than success.

The lack of systematic monitoring and evaluation is not a problem limited to environmental education programs. Indeed, the majority of grassroots conservation organizations have not integrated *on-going* program evaluation into their institutional framework (Abbot and Guijt 1998). Most evaluations of conservation programs are conducted by consultants or outside researchers, rather than local stakeholders (Grundy 1997). When the evaluator leaves the project site, data collection usually stops, and with it, any hope of improving or enhancing the program. Such approaches restrict the potentially powerful role of evaluation--from a *process-oriented change agent* to a mere system of external accountability.

Institutionalizing evaluation into environmental education and grassroots conservation programs requires participation of local stakeholders. Participation of stakeholders demands the knowledge, skills, and capacity to conduct evaluations. The conservation community has begun to focus on integrating local participation into the planning of conservation initiatives (Decker et al. 1996; IIED 1994; Stout et al. 1992; Wells and Brandon 1992). But the majority of conservation organizations revert to

external evaluations by outsiders, rather than integrating local participation throughout the project cycle.

Participatory evaluation represents an innovative and pragmatic approach for implementing systematic program monitoring as the methods involve collaboration and training of local stakeholders in problem identification, evaluation design, data collection, analysis, and use of results. Participatory evaluation has experienced growth in fields such as sustainable development, health, and agriculture, but these strategies have not been applied to environmental education programs.

Given the dearth of monitoring and accountability, the field of environmental education stands in dire need of a viable and relevant model of evaluation. The overall goal of this research was to develop a model for participatory evaluation that could be used to effectively measure impacts and improve programs. This study applied participatory evaluation to the Wildlife Clubs of Kenya in Africa. The primary objectives of the research were as follows:

(1) Identify the constraints, success factors, impacts, and future directions of the Wildlife Clubs of Kenya and the wildlife club movement throughout Africa.

(2) Conduct training in participatory evaluation for WCK staff, teachers, and community members in order to build institutional capacity to conduct participatory evaluation.

(3) Assess the effects of training on attitudes, knowledge, and evaluation skills of WCK staff, teachers, and community members.

(4) Implement participatory evaluation of WCK environmental education programs to measure impacts and improve programs

(5) Institutionalize participatory evaluation into the organization by building on existing organizational structures to develop a monitoring and evaluation system

(6) Develop a model and guidelines for participatory evaluation of environmental education in Africa.

Background research and literature review for this study was conducted from July 1996-June 1997 and resulted in concrete evidence linking systematic program evaluation to successful implementation of environmental education programs (Jacobson and McDuff 1997). The research also revealed the dearth of evaluations in environmental education programs (Jacobson and McDuff 1997). In addition, correspondence with more than 20 environmental education programs in Africa during this period provided support for the low priority given to program evaluation at the grassroots level. Of more than 20 programs contacted during this period, the majority responded that their limited staff, time, and resources precluded participation in a *funded* training program for participatory evaluation.

The Wildlife Clubs of Kenya (WCK) was chosen for this study based on their positive response to the need for capacity-building in participatory evaluation and their pivotal role in environmental education in Africa. As one staff member wrote in 1997: "The realities on the ground are usually different and not as good as what we write. All we can do is welcome you to join us in making sense of conservation education in Africa. Like everybody else, sometimes we fail and fail badly." Anyone familiar with the practical realities of conservation at the grassroots level will recognize the stark truth in his statement, as well as the reality that evaluation might reveal programmatic weaknesses within an organization. Indeed, two thirds of all World Bank development projects in Africa have failed in the past two decades (Blackwood 1988).

WCK represented an ideal case study for testing the relevance and effectiveness of participatory evaluation of environmental education programs. The Wildlife Clubs of Kenya remains the largest grassroots conservation organization for youth in Africa, and has served as a model for similar youth movements worldwide. Despite its 30-year history, WCK had never implemented systematic monitoring and evaluation of its programs. The only evaluations that had been conducted consisted of short-term site visits by donors to inspect specific environmental education projects.

Fieldwork for this study was conducted from July 1997-July 1998. The research project was based in Nairobi, Kenya at the WCK headquarters with travel to the regional offices to conduct trainings and research. The network of facilities, teachers, students, staff, and schools across Kenya provided a unique opportunity to disseminate the impacts of training in participatory evaluation, as well as collect data on WCK from a cross-section of the country.

The second chapter of this study presents an overview of evaluation in environmental education programs. This chapter sets the foundation for the need for an appropriate evaluation model for on-going assessment of the effectiveness of educational programs to promote conservation.

The third chapter examines a case study of WCK, as well as the results of a written survey of wildlife clubs in 15 African countries. This chapter presents the first comprehensive assessment of both success factors and constraints of the wildlife club movement in Africa. This chapter examines issues such as membership, funding, and administration structure; primary activities and media used; impacts and benefits to students; success factors and constraints; recommendations for improvement; evaluation methods; and directions for the future. The findings provide a rich context and

understanding of the setting for examining the role of participatory evaluation within the wildlife club movement.

The fourth chapter addresses the following question: How does a grassroots conservation organization with no history of systematic evaluation integrate such a process into its programming? This chapter presents the strategies and outcomes of capacity building in participatory evaluation for the Wildlife Clubs of Kenya. A total of 120 staff, teachers, and community members participated in trainings on participatory evaluation of WCK. These stakeholders then developed a participatory monitoring and evaluation system for the organization, as well as individual project evaluations in order to institutionalize evaluation into the organizational setting.

In this chapter, I also present an extensive literature review of applications of participatory evaluation, and show how these methods of evaluation have not been applied in the conservation arena. This review provides the requisite background for building a model of participatory evaluation relevant to grassroots conservation organizations. The process and outcomes of training and implementation of participatory evaluation at the Wildlife Clubs of Kenya are documented in this chapter and reveal promising directions for the role of participatory evaluation in conservation.

Chapter 5 addresses the issue of who participates in participatory evaluation of environmental education programs. I examine the use of systematic strategies for identifying program stakeholders at WCK and involving them in participatory evaluation of the effectiveness and impacts of environmental education programs. WCK staff and teachers conducted stakeholder analyses of WCK and identified key evaluation questions that would focus a participatory evaluation involving four primary stakeholder groups. This chapter includes the results of interviews and questionnaires with 127 stakeholders

involved in a participatory evaluation of WCK. The findings reveal that the efficacy of participatory evaluation in this study meets a critical need for a relevant evaluation model within the field of environmental education.

In the final chapter, I conclude by discussing the implications of this research on participatory evaluation for the future of environmental education and conservation. Both lessons learned and recommendations are presented from the above chapters.

CHAPTER 2
TRENDS IN EVALUATION IN ENVIRONMENTAL EDUCATION

Overview of Evaluation in Environmental Education (EE)

The lack of on-going evaluations of environmental education programs remains a critical problem for the field (Linke 1981; Norris and Jacobson 1998; Nowak 1984). One reason behind the dearth of systematic evaluations may be the absence of an evaluation model that fits the context of EE programs (O'Hearn 1982; Thomas 1989/90). Other contributing factors include lack of time, resources, and skills; a focus on program implementation over evaluation; and the perception of evaluation as a complex activity requiring outside expertise (McDuff 1998; Wood and Wood 1985).

An overview of past models and methods for evaluation in environmental education provides a foundation for understanding the need for participatory evaluation in this field. A matrix of 60 studies involving evaluation of EE programs from the 1970s-1990s is shown in Table 2-1. The objective of this review was to compile the literature on EE evaluation that could be accessed through library searches and databases including Current Contents, ERIC (1967-1987; 1988-present), Academic (1988-present), and Books in Print. Publications by the North American Association of Environmental Education were also used in this literature review.

Six studies introduce models or recommended procedures for program evaluation for environmental education (Bennett 1984; Bennett 1988/89; Bennett and Rockwell 1995; Braus and Wood 1993; Jacobson 1991; Lange 1980). Five studies present criteria

or standards for evaluating EE materials (NAAEE 1998; Niedermeyer 1992; Stoutillot and Britt 1994). An additional three studies describe the development of standardized tests for evaluating environmental knowledge of students as a method of program evaluation (ETS Test Collection 1984; Fleetwood and Hounshell 1976; IOC Assessment Associates 1974).

The other studies reviewed present evaluations of individual EE programs. Table 2-2 shows a summary of the 60 studies in terms of the model or methods used in each study. The majority of studies used methods such as pretest/posttest control group design (n=14); surveys (n=13); pretest/posttest design (n=11); and interviews (n=8).

Other methods used included participant observation (n=7); posttest only (n=2); portfolios of student work (n=3); focus groups (n=3); content analysis (n=1); readability tests (n=1); concept mapping (n=1); and committees of community members (n=1). Of the 60 studies in this review, 12 implemented multiple methods of data collection for evaluation, such as using both quantitative and qualitative methods.

Of the 40 studies reporting evaluations of individual EE programs, 50% (n=30) used pretest/posttest control group design, pretest/posttest, or posttest only designs for evaluation. The dominance of the experimental and quasi-experimental methods seen in this review represents a product of the positivist tradition in EE evaluation.

Positivist Tradition in EE Evaluation

Many authors note the influence of the scientific, positivist paradigm in EE research and evaluation (Cantrell 1993; Hart 1993; Robottom 1985; Robottom and Hart 1995). The source of this positivism in evaluation stemmed from outcries in the 1970s for "hard" evaluation data to support the efficacy of EE programs. Doran (1977) criticized an evaluation which concluded that "While no data is currently available, it has been reported

that students show increased awareness, sharpened sense of the environment, and of the interweaving of the self and world" (p. 51). The anecdotal nature of such "assessments" demanded concrete tools to measure effectiveness of EE programs.

Development and assessment of instructional objectives became that tool. Doran (1977) noted that many EE programs lacked either cognitive, affective or behavioral objectives, indispensable for systematic evaluation. He concluded that the "state of the art" for evaluation in EE was "embryonic" and recommended further research to develop measurement tools (p. 61).

Bennett (1974) echoed this call for behavioral objectives in order to conduct "meaningful evaluation" (p. 71). He criticized the most thorough guide to evaluation at the time, which was a self-rating scale for evaluating EE programs (New Jersey Council for Environmental Education 1969). Such a guide was inadequate, he noted, for assessing changes in attitude, knowledge, and skills--goals most effectively couched in behavioral objectives (Bennett 1974). He presented an evaluation model in which specific objectives guide process evaluation, with formal evaluation involving pretest/posttest measures, as well as unobtrusive methods such as observation. The emphasis was on prestated behavioral objectives and experimental design, shaped by the influence of Tyler (1950) and behaviorism in educational evaluation.

Other models advanced at this time included the National Conference on Environmental Education's (1968) self-evaluation model, designed according to Stufflebeam's four phases of evaluation. This 1968 model presented specific standards and evaluation questions for the following steps in evaluation: context, input, process, and

outcomes. The assumption behind this model was that prespecified quality standards would generalize to multiple contexts for EE programs.

Alternative Assessment Models

Dissatisfaction with experimental design and behaviorism resulted in alternative assessment strategies in the EE literature, reflecting naturalistic and responsive evaluation models (e.g., Guba and Lincoln 1983; Stake 1983). Thomas (1989/90) presents the case study as an alternative to experimental designs, which may not account for the multiple perspectives involved in the program. Nowak (1984) posits a method called direct evaluation as a means to circumvent the extensive resources needed for full-scale evaluations.

Jacobson's (1991) P-P-P model emphasizes continuous evaluation in three phases of program activity: planning, process, and product. Assessment tools used in the P-P-P model include both quantitative and qualitative measures, conducted from beginning to end of the project. Other methods advanced in the literature include assessing EE programs through cost-effectiveness models--a concept appealing for its potential utility, but difficult in practical application (Schneider 1993).

The emergence of new assessment strategies reflects the need to develop evaluation models that fit the nature of EE programs. Many of these advances in the literature also represent a reaction to the limitations of a strict focus on behaviorism for evaluating EE programs. Robottom (1985) asserts that traditional evaluation methodology is problematic for EE, which is context-dependent and value-laden. As an alternative to traditional evaluation, he suggests action research, in which the locus of control rests with program participants, rather than an external evaluator or administrator.

Traditional evaluation methods assume an objective, external reality assessed through empirical testing.

The lack of questioning of the written goals of EE also has influenced the current evaluation methodology. "Goals for Curriculum Development in Environmental Education" (Hungerford et al. 1980) became a standard of assessing the efficacy of EE programs. Recommendations have been written to develop instruments to measure learner achievement *according* to these goals (Volk et al. 1984). Robottom (1993) maintains that this behaviorist philosophy aims to change and control the behaviors of value to the researcher, rather than meeting the needs of program participants. Due to the influence of applied sciences, Robottom notes that EE has not followed the constructivist movement in education, which accounts for the goals and expectations of participants.

Hart (1993) echoes this criticism of the emphasis on development and assessment of standardized goals for EE, resulting in a neglect to codify teacher needs and perceptions into the process. He presents participatory action research as an alternative to increase the involvement of teachers in program development and assessment. As an example, participatory action research was used in developing a water quality EE curricula in southeastern Australia (Hart 1993).

Other researchers such as Cantrell (1993) suggest the interpretive paradigm and qualitative methods to incorporate multiple perspectives into data collection, rather than the single reality measured by positivism. In accord with this rejection of EE as behavior modification, Wals (1993) suggests that EE should not impose behavioral objectives on a program, regardless of its context. He purports that research in EE should provide for

participation of stakeholders, with avenues to allow participants access to resources and input for determining program changes.

Beyond the Behaviorism Versus Constructivism Debate--to Participation

The movement in the 1970s and 1980s for creation and assessment of behavioral objectives stemmed from the "clairvoyant" nature of evaluation in EE. Programs *seemed* to be working, according to anecdotal assessments made by program planners or administrators. Such statements did not provide concrete evidence to funding agencies to continue EE programs. As seen in this review of EE evaluations, a primary focus on evaluation has been pretests and posttests, with less consideration given to contextual variables or the participation of stakeholders. The debate concerning alternative assessment presents a looming danger of dividing the behaviorist and constructivist researchers in EE.

The current risk is that researchers are placing themselves in positivist or constructivist camps, with no suitable meeting ground between paradigms. Meanwhile, environmental educators continue to emphasize program implementation over evaluation. As researchers debate the merits of academic philosophies, where do the program participants fit into this debate? Current theoretical conditions in EE and program evaluation are ripe for a true paradigm shift--a movement to redefine the evaluator as facilitator, with stakeholders as participants in program evaluation.

Environmental educators cannot escape the need to develop educational programs to shape specific attitudes and behaviors that promote environmental conservation. However, the objectives and instructional strategies to meet conservation goals must be context-specific. Recent advances in needs assessment models for EE incorporate

participatory approaches (Jacboson 1995b; Jacobson 1997). Such strategies must be extended to participatory methods for evaluation. Participatory evaluation does not beg the qualitative versus quantitative question, but rather allows for context to guide methodology.

In the review of 60 EE evaluation studies, only one of the studies emphasized the primary role of key stakeholders in the *design* of the evaluation (Munene 1993). This evaluation of the Kenya Energy and Environment Organization's environmental education programs developed "environmental committees" of community members to monitor local projects and provide feedback to guide programming (Munene 1993). Thus project stakeholders became evaluators responsible for planning, implementing, and using evaluation results. Such a movement toward *participatory evaluation* is fundamental if the field of EE hopes to enhance the documentation of impacts and thus improve programming.

Participatory evaluations are beginning to be used in community development, health, and sustainable agriculture programs in Africa, Asia, and Latin America (African Development Foundation 1995; Institute of Development Studies 1997; International Workshop on PM&E 1997). The application of participatory evaluation to diverse fields holds promise for its potential use in environmental education. The lack of an appropriate evaluation model for EE and the relevance of participatory evaluation creates a compelling case for the application of participatory strategies for evaluation to EE programs.

Table 2-1: Overview of evaluation studies in environmental education

Author	Focus of evaluation	Evaluation model/ methods used	Findings
National Conference on Environmental Education, 1968	Self-evaluation criteria for EE programs	Model designed according to Stufflebeam's four phases of evaluation	Provides standards and evaluation questions for 4 phases: context, input, process, and outcomes. EE project's rated on scale of 1-10 on these quality standards.
New Jersey State Council for Environmental Education, 1969	Self-rating scale for evaluating EE programs	Evaluation instrument using systems analysis approach for project directors to assess EE programs	Four categories provide basis for evaluation: planning and design; content; operation; and productivity.
IOC Assessment Associates, 1974; Fleetwood & Hounshell, 1976; ETS Test Collection, 1984	Standardized tests	Standardized tests that include environmental objectives and referenced test items on environmental topics	Tests are for use by teachers in measuring cognitive, attitudinal, and behavioral changes related to environmental issues
Kidd, Burrus-Bammel, & Bammel 1978	Evaluation of the West Virginia Industries Camp, a one-week residential environmental program	Pretest/posttest control group design for 29 participants (control group of 24 males took posttest only). Likert-scale instrument measured student attitudes, and written test assessed knowledge gains.	Overall significant change reported in participants' attitudes between pretest and posttest, with significant differences between treatment and control group on the posttest.
Brown, 1979	Evaluation of EE program focusing on energy and the environment	Parent perceptions and observations of child's behavior to assess changes in environmental behavior of students	Exposure to environmental and energy terms from EE program correlated with changes in behavior by majority of students, as reported by parental observation.
Chapline, 1979	Evaluation of an EE/communication skills program in Queens, NY.	Student scores on writing sample tests and tests for literal and inferential comprehension; teacher questionnaires assessed implementation and efficacy issues	Increases in scores on writing tests (90% students received acceptable writing scores, and 54% and 58% reached or exceeded criterion in inferential and literal comprehension respectively.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Kushler, 1980	Evaluation of energy conservation programs in secondary schools	Surveys of high school students on attitudes and reported behaviors	Energy conservation programs had a significant impact on attitudes & behaviors of students, with females showing more positive conservation attitudes than males
Lange, 1980	Framework for evaluation	5-step blueprint	Steps include: (1) developing evaluation design; (2) selecting instruments; (3) collecting data; (4) analyzing findings; (5) presenting results. Recommends consultation with administrators/staff to review evaluation plan
Bennett, 1982	Evaluation of a Maine Studies course incorporating EE (pilot-test of program)	pretest/posttest control group design with 26 schools	Experimental group in Maine Studies course scored significantly higher than control group in regular history & geography classes
Marshdoyle et al., 1982	Evaluation of the effect of student field trips to a zoo	Pretest/posttest design to assess changes in knowledge about wildlife	Cognitive gains concerning knowledge about wildlife after the visit to the zoo.
Fleming, 1983	Evaluation of Project WILD	Pretest/posttest control group design with qualitative tools such as interviews, observations, & surveys (6000 students and 259 teachers)	Project WILD resulted in significant gains in student learning and attitudes, as well as infusion into the curriculum. Secondary school students and teacher showed limited success though compared with elementary.
Bennett, 1984	Framework for evaluation	Uses goals of Belgrade Charter to guide evaluation	Suggests teacher evaluate both behavioral objectives and unanticipated outcomes through quantitative designs such as pretest/posttest, as well as interviews, questionnaires, & observation

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Brody, 1984	Evaluation of the Floating Lab Research Project operated by University of New Hampshire	Pre and post-program clinical interviews using concept mapping and concept propositional analysis to assess conceptual and affective development of 8th grade participants	Gains in positive attitudes toward coastal resources, as well as increases in understanding of marine science concepts as a result of program.
Nowak, 1984	Introduces the strategy of "direct evaluation" applied to an evaluation of the International Seminar of National Parks and Equivalent Reserves	Direct evaluation	Direct evaluation involves asking program participants what you wish to know about the program and what you want to evaluate. This method can be used when programs lack resources for more comprehensive evaluations.
Chenery & Hammerman, 1985	Summary of types of evaluation methods used by residential outdoor education programs	National survey of 144 outdoor education centers	The most frequently noted methods of evaluation were observation (90%); group discussions with participants (78%); discussions with individuals (75%); questionnaires (73%); journals & logs (35%); self-designed tests (17%); film or video (4%); and standardized tests (3.70%).
Chin, 1985	Evaluation of effect of visits to EE center on environmental attitudes of students	Pretest/posttest control group design using pairs of drawings with 232 2nd and 3rd graders. Pairs of similar drawings depicted either environmentally damaging or non-damaging event, and students circled their preferred drawing.	62% of students achieved positive shifts in ecological attitudes following the visits, as compared with 41% of control group.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Westphal & Halverson, 1985/86	Evaluation of long-term impacts of a workshop for adults on water quality issues concerning Lake Michigan	Post-workshop mailed survey using Likert-scale responses to assess attitudes, and open-ended questions for reported behaviors.	Reported changes by participants included enhanced awareness of environmental issues and increased confidence in discussing conservation issues at public meetings.
Jacobson, 1987	Evaluation of a mobile unit EE program in Malaysia's Sabah Park System	Pre and post-program survey with participating villagers to assess environmental attitudes and demographics	Significant positive shifts in villagers' attitudes toward the park following the mobile unit program
Ross & Driver, 1987	Evaluation of a residential Youth Conservation Corps program	Post-program survey 9 months after program used to compare benefits of residential and nonresidential programs	Respondents from residential programs reported significantly higher mean scores on environmental attitudes, knowledge and behaviors than nonresidential participants. (no pre-program scores however)
Bennett, 1988/89	Evaluation model for use in EE	4-step evaluation model	Steps include: (1) decide what to evaluate; (2) determine design & instruments; (3) collect, analyze & interpret data; & report results and improve programs
Bennett & Padalino, 1989	Evaluation of a week-long residential EE program for at-risk youth in New York City public schools	Pre and post-questionnaires for students and teachers; observations, interviews, and document review	Qualitative measures reveal strong support for the program, as well as specific recommendations for involving all personnel and participating organizations in development of program goals and objectives
Thomas, 1989/90	Evaluation of the Master of Environmental Science program at Monash University in Australia used to assess usefulness of the case study approach	Case study	Presents usefulness of the case study approach as a method for evaluation that does not require extensive resources; uses descriptive reporting style; and requires innovativeness

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Pomerantz, 1990/91	Evaluation of content and educational goals of 72 EE curriculum guides for elementary school level	Content analysis and goal analysis of 700 individual lessons	Majority of materials emphasized basic ecological knowledge, rather than environmental analysis, behavior, and natural resource management issues
Armstrong & Impara, 1991	Evaluation of *Nature Scope*, an EE curriculum supplement	Pretest/posttest control group design to assess changes in knowledge; posttest only control group design for attitude changes	Few significant differences between control and treatment groups. Findings may relate to lack of consistency in use of curriculum supplements.
Jacobson, 1991	Evaluation model for development, implementing, and assessing conservation education programs	Provides model for continuous evaluation through the planning, process, and product stages (P-P-P) of programming; uses examples from Belize and Costa Rica	Tools suggested for use in the model include interviews, knowledge tests; observation; questionnaires; etc. Focus on using evaluation results to improve EE programs by evaluating in planning, process, and product stages.
Keen, 1991	Evaluation of Sunship Earth program a 5-day residential EE program for students in Australia	Pretest/posttest control group design with 578 5th and 6th grade students	Treatment group showed significant increases in knowledge of ecology, as compared to control group. No positive shifts in environmental attitudes.
Ryan, 1991	Evaluation of long-term attitudinal change as a result of student visits to Beaver Creek Conservation Area	Post-test only control group design using post-questionnaire one year following visit with 504 5th graders, 84% of whom had visited the area.	Participating students showed more positive environmental attitudes as compared to control group (but no pre-visit data).
Seever, 1991a, 1991b, 1991c, 1991d	Evaluations of 4 Kansas City environmental science magnet schools that infuse EE across the curriculum	Quantitative standardized test scores, as well as qualitative tools such as observation and surveys	Gains in scores in social studies and science, with no increases in reading, language and math scores. Greatest infusion in science and social studies classes.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Niedermeyer, 1992	Checklist of 11 criteria for reviewing EE programs	Checklist to be used as evaluation guidelines for teachers	Criteria include field testing, clear objectives, student practice, focus on behaviors, knowledge & awareness
Braus & Wood, 1993	General parameters for evaluation	Set of recommendations for evaluation	Recommends that the primary goal of EE evaluation is to assess how well the program met its objectives. Suggests quantitative tests that address objectives, as well as qualitative tools like student journals, interviews, attitudinal scales, and student reports.
Bago & Velasquex, 1993	Evaluation of Ecological Orientation Seminars in the Phillipines for adults	Follow-up surveys of participants	Survey responses revealed that 50% of respondents had become involved with attempts to solve environmental problems in their community following the seminar.
Hanson, 1993	Evaluation of changes in energy-related attitudes, knowledge and behaviors from participation in the Energy Source Education program	Posttest only control group design of 1,349 sixth graders	Students who received ≥ 3 instructional units significantly outperformed control group
Munene, 1993	Evaluation of Kenya Energy and Environment Organization's EE programs in Kenya	Development of "environmental committees" of community members to monitor local projects and provide feedback for programming decisions	Reports development of the committees for monitoring but not the results of their decisions.
Padua & Jacobson, 1993	Formative and summative evaluation of EE program in Morro do Diabo State Park in Brazil	Formative evaluation used questionnaires, interviews and observations. Summative evaluation included pretest/posttest control group design for 144 5^{th}-8^{th} grade students.	Significant differences in attitudes and knowledge between experimental and control group.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Schneider, 1993	Advances the use of cost-effectiveness models for evaluating EE programs	Cost-effectiveness analysis	Cost-effectiveness has not been a major concern reflected in EE literature. Need for using cost-effectiveness models for EE.
Vinke, 1993	Evaluation of student environmental magazine "PIED-CROW" in Kenya	Knowledge test given to students from random sample of Kenyan schools	Students who regularly read the magazine score significantly higher on environmental knowledge test than students who either did not read the magazine or read it infrequently.
Zuman, 1993	Evaluation of the Costa Rican Humane Education Project, an EE program integrated into public school curriculum in Costa Rica	Pretest/posttest and control group design to assess environmental attitudes with representative sample of 194 students participating in program and control group of 130 students. (pretest, posttest, delayed posttest)	Students in treatment group scored significantly higher on the posttest and delayed posttest than control group.
Jones et al., 1994	Evaluation of a residential program at the Boyne River Science Center	Survey administered to 289 students in 6 Toronto schools following participation in program	Results provided suggestions for improving the program and reflected students' appreciation of inclusion in the evaluation.
Stroutillot & Britt, . 1994	EE inventory tool with rating scale	Guidelines to be used for evaluation	Rating scale focuses on 5 standards: ecological foundations, issues & values, investigation, action & teaching methods

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Rensselaerville Institute, 1994	Evaluation of the behavioral impacts on students and teachers of the Children's Groundwater Festival in Nebraska	Focus groups conducted with students who had participated in most recent festival; students who had attended at least one festival 3-6 years ago; teachers who had attended the festival; and "control" groups of students who had not attended the festival	The festival has successes in affecting both adoption and maintenance of behavior changes in attendees, but the success is inconsistent throughout the attendee population. Changes are more widespread for adoption of behaviors, rather than maintenance. Examples of behavior changes include taking shorter showers; turning off water when brushing teeth, etc.
White, T.G, & Jacobson, S.K., 1994	Evaluation of conservation education programs at a South American zoo in Cali, Columbia	Pretest/posttest control group design with 4 experimental groups of 1,015 randomly selected fourth-grade students	Knowledge and attitude scores of students whose teachers participated in the zoo workshop program improved significantly. No effects on knowledge and attitudes of the other treatments.
Bennett & Rockwell, 1995	Presents a model for program planning and evaluation focused on targeting outcomes of programs (TOP)	The TOP model for planning and evaluation targets specific program outcomes; tracks their achievement; and evaluates program in terms of achieving these outcomes.	The TOP model assumes that programs first target social, economic and environmental conditions *(SEEC)* and the *practices* needed to achieve the targeted conditions; then the knowledge, attitudes, skills and aspirations *(KASA)* needed to adopt these practices; the *reactions* to ensure *participation* in program *activities* and the *resources* required. Cooperative extension in the U.S. had adopted this model for evaluation.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Milton, et al., 1995	Formative evaluation of the Park/School program developed by Yale School of Forestry & Environmental Studies	Pretest/posttest control group design to assess changes in student attitudes and knowledge; qualitative measures included participant observation, portfolios of student research, and interviews with parents, teachers, interns, and park rangers. User-satisfaction survey to document student perceptions.	Participating students showed significant increase in environmental knowledge, as compared to control group. User satisfaction surveys and qualitative measures revealed positive attitudes toward program, as well as changes in social skills such as communication & teamwork.
Dietz & Nagagata, 1995	Evaluation of EE program for the Golden Lion Tamarin Project in Brazil	Baseline surveys conducted in 1984 compared with surveys in 1986, two years after program implementation	Significant increases in knowledge and attitudes of local students and adults regarding conservation of the Golden Lion Tamarin
Farmer & Wott, 1995	Evaluation of the effects on cognitive learning of field trips and follow-up activities to the Washington Park Arboretum in Seattle, WA	Pretest/posttest control group design with 111 4th graders in three groups. Two group received follow-up activities related to visit, while third group received follow-up activity unrelated to park visit.	Significant gains in total scores for all three groups, with highly significant increases for treatment groups and less significant gains for control group.
Hanna, 1995	Evaluation of Outward Bound and Audubon field ecology program	Pretest, posttest, & delayed posttest after 6 months compared participants' wilderness knowledge, attitudes, intentions and reported behaviors	Audubon group had more predisposing factors on environmental knowledge & attitudes, and significantly outperformed Outward Bound group on pretest, posttest, and delayed posttest.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Paaby & Clark, 1995	Evaluation of a naturalist guide training program in Costa Rica	Interviews conducted with participants four-months following program. Follow-up after 2 years.	Participants reported they would not have been involved in conservation activities before the course, but were currently working as guides or research assistants. Two years later, 20/22 were employed in conservation.
Toth-King & Marcinkowski, 1995	Four-year evaluative research study with 3rd, 4th, and 5th graders of the EE programs at Pine Jog Environmental Education Center	Data collected from students and teachers participating in new programs; exposed to the old programs; and a control group. Tools included pretest posttest control group design; classroom chart of student behaviors; portfolio of student work; teacher logs; teacher feedback forms.	For all grade levels, students in the new EE program showed significant gains in knowledge. Authors note that 4-year study required time and funding beyond the reach of most nonformal programs. Also noted that program staff was involved in evaluation design.
Weber, 1995	Evaluation of EE component of the Mountain Gorilla Project in Rwanda	Initial survey of villager attitudes conducted in 1979 and follow-up survey in 1984	Significant changes in villager perceptions of park conservation value from 1979 to 1984
Knapp, 1996.	Evaluation of three environmental interpretation programs on environmental knowledge, attitudes, and behaviors of students	Pretests and posttests for 3 interpretive programs: (1) 600 3rd and 4th grade students in half-day field trips to the Hilltop Interpretive Project (2) 1,600 urban 4th and 5th graders in field trips to Indiana Dunes National Seashore (3) Year-long 5-phase EE program for middle school teachers and students for the Charles Dan Wilderness	The three interpretive programs increased student knowledge, but only the field trips to the Indiana Dunes affected attitudes and behavioral intentions. Interpretive experiences involving empowerment and ownership variables did not affect attitudes or behaviors.

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
NAAEE, 1996, 1998	Criteria for developing and evaluating EE materials	Six "guidelines for excellence" for use in evaluating the quality of EE materials	Guidelines include: (1) fairness and accuracy (2) depth; (3) emphasis on skills building; (4) action orientation; (5)instructional soundness; (6) usability
World Wildlife Fund, 1996	Formative evaluation of a WWF biodiversity education curriculum, Windows on the Wild	Biodiversity literacy assessment instrument developed with both affective, cognitive, and efficacy items. Pretest and posttests conducted for 174 students at 2 schools	Significant pre-post changes for the whole population on attitudes and cognitive items. No significant changes in efficacy (feelings of personal control regarding biodiversity).
Eagles, 1997	Evaluation of the Waterloo County Board of Education Outdoor and Environmental Education program in Ontario	Survey of 517 8th and 12th graders in Waterloo County schools who attended outdoor and EE programs	Majority of students reported high levels of learning in ecology and environmental studies. Most students reported positive attitudes toward the program.
Gough, 1997	Evaluation of the readability of Australian government literature on the environment and the understanding of students and the public as a result of reading the materials	Fry readability test and the Flesch test for readability used to measure readability of documents; Questionnaires, Cloze test, and focus group discussions used to measure understanding of students and a sample of the general public	Findings showed that the language level of materials made comprehension of materials difficult
Gray, T. 1997	Longitudinal evaluation to determine impacts from a gender perspective of a residential outdoor education program in Australia	Questionnaires and interviews with 409 ninth graders, parents, and teachers before, during, and after program, and at 12-month follow-up	Girls were successful and were more positive than boys toward social and personal dimensions of the outdoor education experience

Table 2-1--continued

Author	Focus of evaluation	Evaluation model/ methods used	Findings
Hollweg, 1997	Evaluation of the VINE EE Program (Volunteer-led Investigations of Neighborhood Ecology)	Five different evaluations of the VINE program, using tools such as written and oral questionnaires with 28 teachers, parents, and youth leaders, 66 children and 34 volunteers; participant observation, interviews, focus groups; pre and post student questionnaires and control group; student drawings, surveys for teachers and administrators; pre and post surveys for teen volunteers	VINE programs provide urban students with opportunity for hands-on science that they would not have otherwise; resulted in more positive attitudes toward science than control group; majority of teachers felt VINE influenced their teaching; student drawings showed increased knowledge as result of program;
Marynowski & Jacobson, (in press)	Evaluation of a public ecosystem education program for adults at Eglin Air Force Base, FL	Pre-program survey/post-program survey control group design assessed changes in knowledge and attitudes of Eglin recreational users and neighboring citizens. Random assignment of respondents from baseline survey to treatment & control groups. Posttests administered one year after implementation of program.	Post-program surveys revealed significant changes in overall knowledge level and positive shifts in attitudes, as compared with control group.
Jacobson & Marynowski, 1998	Evaluation of interpretive materials aimed at military leaders and planners at Eglin Air Force Base, FL.	Pre and post-program survey assessing knowledge and attitudes in four content areas: (1) native & endangered species; (2) fire ecology; (3) ecosystems; and (4) forest resources & habitats	Evaluative surveys showed significantly improved knowledge and attitudes in several content areas among military leaders and planners. Mass media was most successful interpretive approach.

Table 2-2. Summary of methods from review of evaluation in EE

Methods	Studies (N=60)
• Criteria/standards for evaluating EE materials and programs	National Conference for EE 1968; New Jersey Council EE 1969; Niedermeyer 1992; Stroutillot & Britt 1994; NAAEE 1996/1998
• Models/recommended procedures for evaluation of EE programs	Lange 1980; Bennett 1984; Bennett 1988/89; Jacobson 1991; Braus & Wood 1993; Bennett 1995
• Standardized tests for measuring environmental knowledge	IOC Assessment Associates 1974; Fleetwood & Hounshell 1976; ETS Test Collection 1984
• Pretest/posttest control group design	Kidd et al. 1978; Bennett 1982; Fleming 1983; Chin 1985; Armstrong & Impara 1991; Keen 1991; Padua & Jacobson 1993; Zuman 1993; Gutierrez de White & Jacobson 1994; Milton et al. 1995; Farmer & Wott 1995; Marynowski & Jacobson (in press); Hollweg 1997; Toth-King & Marcinkowski 1995
• Surveys	Chapline 1979; Kushler 1980; Fleming 1983; Chenery & Hammerman 1985; Westphal & Halverson 1985/86; Ross & Driver 1987; Seever 1991a, 1991b, 1991c, 1991d; Bago & Velasquex 1993; Jones et al. 1994; Eagles 1997; Gray 1997; Gough 1997; Hollweg 1997
• Pretest/posttest or presurvey/postsurvey	Marshdoyle et al. 1982; Jacobson 1987; Bennet & Padalino 1989; Seever 1991a, b, c, d; Dietz & Nagagata 1995; Hanna 1995; Weber 1995; Knapp 1996; WWF 1996; Hollweg 1997; Jacobson & Marynowski 1998
• Interviews	Brown 1979; Brody 1984; Fleming 1983; Bennett & Padalino 1989; Padua & Jacobson 1993; Milton et al. 1995; Paaby & Clark 1993; Gray 1997; Hollweg 1997
• Participant observation	Brown 1979; Bennett & Padalino 1989; Seever 1991a, b, c, d; Fleming 1983; Padua & Jacobson 1993; Milton et al. 1995; Hollweg 1997

Table 2-2--continued

Methods	Studies (N=60)
• Multiple methods used	Chapline 1979; Fleming 1983; Brody 1984; Bennett & Padalino 1989; Seever 1991a, b, c, d; Jacobson 1991; Padua & Jacobson 1993; Milton et al. 1995; Gough 1997; Gray 1997; Hollweg 1997; Toth-King & Marcinkowski 1995
• Posttest only control group	Ryan 1991; Armstrong & Impara 1991; Vinke 1993
• Posttest only	Chapline 1979; Hanson 1983
• Portfolios of student work	Milton et al. 1995; Hollweg 1997; Toth-King & Marcinkowski 1995
• Focus groups	Rensselaerville Institute 1994;Gough 1997; Hollweg 1997
• Concept mapping	Brody 1984
• Content analysis	Pomerantz 1990/91
• Readability tests	Gough 1997
• Committees of community members	Munene 1993
• Case study	Thomas 1989/90
• Direct evaluation	Nowak 1984
• Cost-effectiveness	Schneider 1993
• Teacher logs & feedback forms	Toth-King & Marcinkowski 1995

CHAPTER 3
ASSESSING IMPACTS AND FUTURE DIRECTIONS OF YOUTH CONSERVATION ORGANIZATIONS: WILDLIFE CLUBS IN AFRICA

Introduction

Environmental attitudes are first formed during childhood (Bryant and Hungerford 1979; Leeming et al. 1995; Musser and Malkus 1994; Tilbury 1994; Wilson 1996). Numerous studies reflect the importance of influences such as interaction with natural areas, role models in conservation, and early experiences in the outdoors as factors in shaping environmental interest and action (Chawla *in press*; Chawla 1998; James 1993; Palmer 1993; Peters-Grant 1986; Peterson 1982; Sward 1996; Sobel 1998; Tanner 1980; Votaw 1983). These findings emphasize the importance of reaching youth in order to influence a generation that can affect conservation issues and ensure the future protection of natural resources. Across the globe, environmental education has seldom been a priority in the school curriculum (Jacobson and McDuff 1998). Given this reality, what institutional structures exist to influence attitudes and to build the capacity of youth to address conservation issues?

Wildlife and environmental clubs represent important conservation organizations for youth that have made significant impacts worldwide. Studies support the role of youth groups and conservation organizations in providing the significant life experiences critical to the development of environmental interests and action (Chawla *in press*; James 1993; Palmer 1993; Peterson 1982; Sward 1996). One key role of conservation organizations for youth is to provide motivation and skills to individuals at a young age to conserve

natural habitats and resources. Another objective is to address issues that have been neglected by public authorities or adults. Conservation organizations for young people address these objectives by:

- providing practical experiences in outdoor settings
- conducting hands-on conservation activities
- increasing knowledge regarding local, national, and global ecological issues
- identifying roles for youth to enhance conservation action in the community
- developing responsibility among youth for the environment (Voordouw 1987).

Across the globe, youth involved in conservation movements have influenced environmental problems, policy, and politics. A group of students in Florida in 1988 successfully lobbied a Florida power company and county commissioners to create a park on the banks of the power plant discharge canal to protect endangered manatees (Hammond 1995). Through the Global Rivers Environment Network, students monitor the quality of their local rivers in 125 countries ranging from Australia, Argentina, Bangladesh, and Mexico (Stapp et al. 1995). When involved in conservation at an early age, young people can exert a significant influence on environmental issues, both as youth and potentially later as adults.

In Africa, the wildlife club movement represents the largest grassroots conservation organization for youth on the continent. Wildlife clubs are found in at least 17 Anglophone countries and 10 Francophone countries in Africa (Boulton & Eddershaw 1997; Boultan, M. pers. comm). Begun in 1968, the Wildlife Clubs of Kenya was the first wildlife club movement worldwide. The genesis of this youth organization in the late 1960s in Kenya prompted the growth of wildlife clubs in countries such as Zambia, South Africa, Uganda, and Malawi in the 1970s. Concomitantly, conservation groups in India

also followed the Wildlife Clubs of Kenya model and established the first Asian counterpart of wildlife clubs.

Today, wildlife and environmental clubs for youth can be found throughout Africa, Asia, and other parts of the globe, such as Latin America, Australia, and Europe. In countries worldwide, students who are members of wildlife clubs meet weekly to conduct environmental activities, visit national parks, and investigate conservation issues in their local community.

With a 30-year history involving more than one million youth, the Wildlife Clubs of Kenya provides an excellent case study of the success factors, constraints, strategies, and needs of a conservation organization targeting youth. Case studies provide a toolbox of multiple methods of data collection and analysis for understanding a contemporary phenomenon in breadth and depth (Yin 1984; Patton 1990).

To date, no systematic evaluation has been conducted of the elements leading to success of wildlife clubs in Africa (Chadri 1997). An understanding of the context at the Wildlife Clubs of Kenya (WCK) provides a backdrop for examining similarities and differences among other wildlife and environmental club programs throughout Africa.

This study examines the Wildlife Clubs of Kenya: its history; membership, funding and administrative structure; primary activities and media used; impacts and benefits to students; success factors and constraints; recommendations for improvement; evaluation methods; and directions for the future. The study then uses these findings to analyze the above issues with respect to the Wildlife Club movement in 15 other African countries. This systematic analysis of the wildlife club movement in Africa provides an overview of the strengths and weaknesses of this environmental education approach and reveals promising directions for the future.

Methods

The methods used in the case study of Wildlife Clubs of Kenya included participant observation conducted from July 1997-July 1998 to observe the organization in its real-life setting. Observation was conducted by participating in activities such as: staff meetings, workshops and seminars, student rallies, student field trips, teacher field trips, club meetings, mobile education unit visits, and meetings with donors. Semi-structured interviews were conducted with nine staff members from a total of 25 staff of WCK. A representative sample of staff was chosen to reflect education staff, administrative staff, and support staff from the national and regional offices. A focus group (Krueger 1988) also was held with the four education staff members at WCK headquarters to discuss strategic planning and the future of WCK.

Document review of sources such as past WCK *Komba* magazines, project reports, and minutes of staff meetings from 1968-1998 contributed to the development of a historical perspective on the organization. The data from the interviews were used to substantiate findings revealed through document review and participant observation, resulting in triangulation of data. Triangulation is the combining of multiple data sources and methods to strengthen data collection and analysis (Wholey et al. 1994).

The wildlife club movement in Africa was examined to assess strengths, weaknesses, impacts and directions for the future. A written survey was conducted with 16 wildlife club programs in Africa: Botswana, Ethiopia, Ghana, Kenya, Malawi, Namibia, Nigeria, Seychelles, Sierra Leone, South Africa, Swaziland, Uganda, Tanzania, Zambia, Zanzibar, and Zimbabwe. These clubs represented the existing active wildlife club programs in English-speaking Africa based on their participation in the 1996 Wildlife

Clubs conference in Malawi. The survey consisted of 18 open-ended questions, which were pilot-tested with staff at the Wildlife Clubs of Kenya.

The survey was developed and sent to the wildlife club programs according to standard survey design techniques (Bernard 1995; Dillman 1978). Respondents for the survey included either the primary education officer or the national coordinator of the program. The original survey and cover letter were sent on 10/30/97, followed by: a reminder postcard (11/18/97); a reminder letter and a copy of the survey (01/23/98); a reminder letter (03/04/98); a faxed reminder (05/29/98); and another copy of the survey (08/12/98). The response rate was 94% with 15 of the 16 programs completing the survey.

Results

Historical Perspective

WCK

The idea for the Wildlife Clubs of Kenya initiated from the desire of Kenyan students to see the wildlife in their national parks in person, rather than in pictures. In 1966, an American Peace Corps volunteer showed his Kenyan students at Kagumo High School the slides of animals he had seen in his safaris to the Kenyan parks. The students decided to form a wildlife club with the intention of studying wildlife and visiting the national parks in Kenya. In December 1968, a group of 50 Kenyan students gathered for a two-day conference at Kagumo High School and made recommendations to create a national organization, the Wildlife Clubs of Kenya (WCK).

In 1969, the National Museums of Kenya provided WCK with a small office, and the first WCK newsletter was published and distributed to 21 clubs. In the early 1970s, the number of wildlife clubs grew, and staff initiated field-based activities that promoted

interaction of Kenyan students with their national parks. The first five-day student field training course was held in Tsavo East National Park in 1970, and one representative from each club participated. In 1970, the trustees of the Kenya National Parks waived park entry fees for wildlife club members. Thus, the WCK movement promoted domestic tourism to the parks for the first time, as the majority of park visitors were foreign tourists, not Kenyans.

In 1973, WCK members visited the northern part of Tsavo National Park and saw elephant carcasses and the limited park rangers available to combat poaching. The students returned to the capital Nairobi, and decided to hold a march and present a petition to government officials. The objective of the first march in 1973 was to lobby for more resources for wardens and to halt poaching of elephants. The second march in 1977 urged the government to ban hunting and close curio shops selling ivory. Five thousand students marching in the streets riveted the attention of top government officials, and a hunting ban was imposed in Kenya in 1977. Today, conservationists debate the merits of the hunting ban, but no one questions the impact of the wildlife club movement on conservation policy at the time.

Wildlife Clubs of Kenya in the 1980s received both national and international recognition, such as the 1986 domestic tourism award in Kenya and the 1987 UNEP Global 500 Honor Roll for achievements in conservation. WCK continued popular activities begun in the 1970s such as the art and essay competitions, student seminars, teacher training workshops, a Mobile Education Unit, the *Komba* magazine, and club visits to the parks.

By this decade, WCK had become the largest grassroots conservation organization for youth in Africa. But the growth came with a price. While 1,800 clubs had registered

since inception of WCK, only 25% had renewed their membership in 1987 (Minutes of staff meeting, 23 April 1987). WCK had begun to focus on a target audience of adults through its associate membership program. In addition, the organization accumulated substantial financial debts by the late 1980s (Chomba 1990).

The 1990s were a period of organizational overhaul and decentralization for WCK. Two additional regional offices were opened for a total of four regional offices and one national office in Nairobi (Figure 3-1). Elected groups of teachers, called Action Groups, were formed to coordinate activities at the regional and local levels in the nine WCK regions. In addition to decentralizing, WCK made steps toward financial sustainability by creating an endowment fund with advice from World Wildlife Fund. At the 25th anniversary of WCK in 1993, the Ministry of Tourism made the initial donations to the WCK endowment fund, which now totals $20 million shillings ($333,000 U.S. dollars)

In the early 1990s, the national office began a tradition of establishing annual conservation themes to focus the educational activities for each year. Examples of WCK themes in the 1990s have included indigenous trees and forests, young women and biodiversity conservation, and community participation in conservation.

Table 3-1 presents an overview of the history of WCK from the 1960s to the 1990s. Table 3-2 examines the focus of WCK during the past 30 years, as well as the methods used to address both environmental and organizational issues. While the environmental messages have changed, the instructional strategies have remained the same. For example, wildlife clubs have used trips to the national parks as an instructional strategy to teach students about their wildlife. Today's one-day Ecology program in Nairobi National Park uses the park as a resource to enhance the school curriculum, while

the field-based programs in the 1970s took students on anti-poaching missions, in addition to conducting research on wildlife species.

Wildlife clubs in Africa

Following its inception in Kenya, the wildlife club movement soon spread to other countries in Africa. WCK staff often visited these countries to provide training, as well as examples of club activities and publications. In the case of countries such as Zambia and Ethiopia, leaders in conservation organizations such as the Wildlife Conservation Society of Zambia initiated the clubs. In other countries such as Uganda, students who had visited the Wildlife Clubs of Kenya returned to their country with the intention to organize clubs at home.

Figure 3-2 shows the location and founding dates of the countries with wildlife clubs represented in this article. The former British colonial school system incorporated extracurricular clubs into its curriculum. This structure within the academic setting has continued to provide institutional support for wildlife clubs in many English-speaking countries. Francophone countries such as Senegal and Gabon have also developed wildlife clubs.

Membership, Funding, and Administrative Structure

WCK

WCK has grown from an average of 100 clubs in the early 1970s to 790 registered clubs in 1997. Since 1968, more than 2,500 clubs have registered as WCK members (Figure 3-3). Before 1978, schools were not required to renew annually. Wildlife clubs can join from primary schools, secondary schools, and universities. To become a member, wildlife clubs at individual schools in Kenya pay an annual fee of 500 shillings ($8), while students each pay 10 shillings (17 cents). From this annual fee, WCK regional offices or

Action Groups receive 200 shillings ($3) for every school that registers from their region. This contribution helps to fund regional activities such as student rallies.

A primary benefit of membership in WCK is free entry to the national parks in Kenya. However this benefit means that some schools wait to renew their membership until they raise funds to visit the nearest national park. Consequently, some clubs continue activities without renewing, while others renew without conducting regular projects. This fact creates a challenge in terms of monitoring and defining active clubs.

Funding for WCK activities is provided from varied sources which include: donors such as the African Fund for Endangered Wildlife, Prince Bernherd Fund for Nature, the British Council; the government of Kenya; membership fees paid by clubs; and the WCK endowment fund. Recent cutbacks in government spending have reduced federal contributions to WCK.

WCK is run by a 20-member governing council of civil servants, members of conservation organizations, private citizens, and teachers (Figure 3-4). The management committee consists of a group of members of the governing council who meet monthly to oversee WCK administrative affairs. WCK has a total staff of 25, with a headquarters in Nairobi and regional offices in the Coast, Western, Rift Valley, and Eastern regions of Kenya. As noted, in each of the nine WCK regions across Kenya, a group of elected teachers, called an action group, coordinates regional activities. At the school level, a teacher leads the individual wildlife club with a group of elected students who comprise the club officials. Membership in the wildlife club is voluntary for students, although Kenyan students are required to join one club in their school.

Wildlife clubs in Africa

The majority of wildlife club programs require their member clubs to pay a minimal annual registration fee in order to receive benefits such as club magazines, free entry to parks, and other publications. Of the 15 clubs in this survey, the mean number of registered clubs in 1997 was 315 clubs (range 13-1000). As found in WCK, defining "active" membership is not a clear-cut issue for most wildlife club programs. Some wildlife clubs remain active although they do not renew their membership each year. Others pay their annual membership fee but do not conduct regular activities. Given this reality, the need for accurate monitoring at the regional and club level becomes apparent for all wildlife club programs.

Funding for wildlife club programs stems from a variety of sources (Table 3-3). Ninety-three percent (n=14) of the clubs surveyed receive funding from international donors, such as the United States Agency for International Development, the Global Environment Facility, and the British Council. Only three of the programs (20%) responded that the national government is a primary source of funding. Membership fees and sales of publications contribute to the finances of the majority of the programs surveyed, although the amount is small in comparison with donor funding. The Wildlife Clubs of Kenya is the only program that noted an endowment fund as a source of revenue, although the Wildlife Clubs of Uganda has also begun a similar program.

The majority of the programs (67%, n=10) are administered through a separate conservation organization which houses the wildlife club program (Table 3-4). For example, the Wildlife Clubs of Zambia constitutes the education wing of the Wildlife Conservation Society of Zambia with nine staff at the national office. The clubs in Ethiopia are administered through the Ethiopian Wildlife and Natural History Society in

collaboration with the Ministry of Education. Twenty percent (n=3) of the programs (Kenya, Uganda, and Swaziland) have their own autonomous offices with staff employed by the wildlife club program. In addition, two programs (13%) do not have staff or an office (Zanzibar, Seychelles) but rely completely on volunteer efforts. These two countries have smaller membership (13 clubs, 20 clubs respectively), and also are located on small islands.

Primary Activities and Delivery Systems

WCK

Activities are conducted at three levels within WCK: the national, regional, and club level. The headquarters conducts activities such as art and essay competitions, teacher workshops, the Mobile Education Unit, field-based Ecology programs, environmental campaigns, and publication of the *Komba* magazine. Published three times a year, the *Komba* magazine is the only free environmental magazine for youth in Kenya.

At the regional level, staff and teachers organize events such as clean-ups and student rallies on conservation themes. During student rallies, clubs present poems, songs and drama that reflect either the annual conservation theme or regional environmental issues. In the Coast region, for example, more than 1,000 students participate in the annual Marine Environment Day. During this event, students present songs and sand sculpture that reflect marine life and marine conservation. Individual clubs meet weekly to plan club activities such as tree planting, school and community beautification, discussion of environmental topics, and student trips to the parks.

The delivery systems used by WCK includes publications such as the *Komba* magazine, pamphlets on activities such as birdwatching and club museums, articles in newspapers, posters, drama and songs, video and films. The Mobile Education Unit visits

member schools and shows wildlife and environmental films, while the headquarters maintains a video library of wildlife videos available to clubs. In 1996-1997, the Mobile Education Unit visited 174 schools, reaching 40,000 students. In the 1970s, WCK conducted a weekly radio show, but neither radio or television is a primary media used by WCK today.

Wildlife clubs in Africa

Table 3-5 shows the primary activities of the 15 wildlife and environmental club programs. The majority of programs implemented the following activities: tree planting and tree nurseries (87%, n=13); student trips to parks and reserves (73%, n=11); art, drama, poetry, and competitions (67%, n=10); and clean-ups and beautification (67%, n=10). Forty percent (n=6) publish educational resources and club magazines and conduct environmental rallies and campaigns as a primary activity. Thirty-three percent (n=5) conduct workshops for teachers and students and environmental monitoring and research.

The primary delivery systems used to disseminate their activities and educational messages included the following: club magazine, newsletter, publications (93%, n=14); radio (73%, n=11); drama/songs (53%, n=8); newspaper (40%, n=6), television (40%, n=6); posters (27%, n=4); and video/films (27%, n=4).

Primary Impacts and Benefits to Students

WCK

The primary impacts of WCK as perceived by staff (n=9) included increased awareness of conservation among students (56%), and the role of WCK as a model for other wildlife clubs and youth movements (56%). Another important impact noted by

staff (44%) was that the majority of conservation professionals in Kenya were WCK members as students.

Many of the staff recalled that their own interest in conservation began with their decision to become a wildlife club member in secondary school. "I remember going to Masaii Mara reserve and talking to the organization Friends of Conservation as a WCK member," said staff member Patrick Njagi.[1] "That visit gave me so much. At the time, I was wishing I was already finished with college and that I was working in conservation. I still remember that very, very well."

Other impacts cited by at least one staff member included bringing students into the national parks, enhancing environmentally responsible behavior of students, creating a network of clubs in Kenya, and involving a large number of Kenyans in conservation as WCK members.

When asked about benefits to students from WCK, the majority of staff listed trips to the park and free entry to the national parks as the primary benefit (89%). As staff member Mary Mbugua noted, "I realize how hard it is for Kenyan children to go to the parks without WCK. If your parents are working and making 2,000 shillings a month ($33), they don't have the money to take you to the park, and they certainly don't have a vehicle."

Other benefits to students noted by two or fewer staff included exposure, knowledge and skills in conservation; films and resources; interaction with other students; participation in rallies; seminars, and competitions; *Komba* magazine; the promotion of environmentally responsible behavior; and the Holland-Youth Exchange Program.

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[1]Some names have been changed to ensure confidentiality of informants.

Wildlife clubs in Africa

The primary impact of wildlife clubs perceived by the majority of respondents (73%, n=11) was increased environmental awareness and knowledge among students (Table 3-6). Other impacts included enhanced student participation in conservation (40%, n=6); tree planting and nurseries (40%, n=6); the influence on students' career choice toward conservation (40%, n=6); involvement of parents and community (33%, n=5); influence on environmental policy (33%, n=5); provision of resource materials to schools (20%, n=3); and student visits to parks (13%, n=2).

A number of clubs cited impacts specific to their individual programs. For example, Wildlife Clubs of Ghana cited decreased incidence of trapping seabirds, while Swaziland noted changes in community attitudes and behaviors, increased water conservation practices, and improved farming methods. An impact cited by the Wildlife Clubs of Kenya was its role as the first wildlife club in Africa serving as a model for other countries.

In terms of benefits derived by student members, sixty-seven percent (n=10) cited trips to the parks and reserves as the main benefit. As seen in Table 3-7, other benefits of membership included increased knowledge and skills in conservation (47%, n=7); educational materials and magazines (33%, n=5); involvement in conservation projects (33%, n=5); free entry to parks (33%, n=5); interaction with other students (27%, n=4); experience leading to conservation career (13%, n=2); videos/films (13%, n=2); and trainings and workshops (13%, n=2). Primary benefits listed by seven percent (n=1) of clubs included certificates and trophies; hostel facilities; and funds for small-scale projects.

Constraints and Success Factors

WCK

The majority of the nine staff members interviewed noted lack of funds and resources as the primary constraint faced by WCK (89%). Other constraints included lack of communication and follow-up between WCK and clubs (33%). Constraints noted by two or fewer staff were lack of time in the school curriculum, lack of transport, lack of accountability for some staff, lack of support from school administration, lack of public relations about WCK, shortage of personnel in some regions, lack of transition when active teacher leaves club, and the need to support staff decisions and ideas.

Success factors cited by staff included committed teachers and staff members (44%), and support of stakeholders (33%). Other success factors cited by two staff members were enthusiasm of students and the consistency of WCK as a model program in Africa.

Wildlife clubs in Africa

Table 3-8 lists constraints and success factors reported by wildlife club programs. Eighty percent (n=12) of the countries cited lack of funds and resources as their primary constraint. In addition, 47 % (n=7) noted that staff retention and teacher transfers constitute a major constraint to effective programming. Other constraints listed by respondents include lack of training for teachers and staff (33%, n=5); difficulty communicating with clubs (27%, n=4); lack of time in curriculum (20%, n=3); shortage or lack of staff (20%, n=3); dependence on volunteers (20%, n=3); and lack of transport (13%, n=2). Seven percent (n=1) of respondents noted additional constraints such as lack of support from school administration, lack of a permanent office, shifting donor objectives, and political instability.

The most frequently cited factors that promote successful wildlife club programs included stakeholder support (47%, n=7); commitment of staff, teachers and students (40%, n=6); staff visits to clubs (27%, n=4); and workshops for teachers and students (27%, n=4). Additional factors that enhance success include publicity/mass media (20%, n=3); provision of resource materials by the organization to individual clubs (20%, n=3); student trips to parks (13%, n=2); and consistency over time (13%, n=2). Other success factors noted by seven percent (n=1) of respondents were a national environmental education (EE) policy; incentives for active clubs; funding for local projects; regional club coordinators; and increased funding.

Recommendations for Improvement

WCK

The primary recommendations noted by the staff were to improve communication between WCK and the clubs (33%), improve communication among staff (33%), appreciate staff efforts and ideas (33%), and improve the physical facilities at headquarters (33%).

At least one staff cited other individual recommendations such as: organize more teacher and student workshops, improve public relations and publicity, increase focus on rural clubs, increase staff salaries, strengthen two of the weak regional offices, fill vacant staff positions as soon as possible, equalize distribution of funds to action groups, hire another driver, focus on education programs, practice environmentally friendly actions like recycling at the office, and support the new monitoring and evaluation program, the incentive program.

Wildlife clubs in Africa

Respondents suggested recommendations to improve the effectiveness of the wildlife club program in their country (Table 3-9). Forty-seven percent (n=7) of the programs surveyed recommended increased networking among other wildlife clubs in Africa. In addition, 27% (n=4) noted the need for increased visits and communication between the headquarters and clubs, while 20% (n=3) suggested incentives for teachers and improved publicity/public relations for clubs.

Other recommendations for improvement included increased training for teachers and students (13%, n=2); a grassroots focus for clubs (13%, n=2); and strategic planning for the future direction of wildlife clubs (13%, n=2). Seven percent (n=1) of wildlife club programs cited the following individual recommendations: motivation for staff; long-term environmental projects for clubs; integration of environmental education (EE) into the curriculum; strengthening economic foundation of clubs; enhancing accountability; decentralization; increased audio-visual equipment; and increased support from local authorities.

Survey respondents also assessed the current needs of their wildlife club program, with 67% (n=10) citing funding and resources as the most important need. Increased training for teachers and staff was noted by 40% (n=6), as well as increased communication and visits to clubs (27%, n=4); transport for student trips and staff (27%, n=4); and an international network of wildlife clubs (20%, n=3). Needs cited by 13% (n=2) of club programs were an endowment fund or financial sustainability; a permanent office/staff; and capacity-building in evaluation.

Other needs noted by 7% (n=1) of respondents included regional offices; additional education staff; repackaging of program; aggressive policy geared toward

practical outputs; improved capacity to sustain new clubs; a strengthened endowment fund; improved regional capacity; incentives, and improved materials production.

Evaluation Methods

WCK

Despite its 30-year history of environmental education for youth in Kenya, WCK does not have a history of monitoring and evaluating its impacts or effectiveness. Review of project reports and documents reveals that the primary method of evaluation in the past included periodic site visits by external donors. These evaluations did not involve staff or other stakeholders in formulation of evaluation questions or analysis of results. Hence, the results were rarely used to guide program improvement.

From 1997-1998, however, WCK began a training program as a component of this study to build the capacity of its staff and teachers in participatory monitoring and evaluation of its programs. A total of 120 staff, teachers, and community members were trained in participatory evaluation methods. In addition, the organization started an "Incentive Program" to encourage individual clubs, action groups, and regional offices to monitor and evaluate their activities. This incentive program will award best club in each region, best Action Group, and best regional office on the basis of success indicators for evaluation.

Wildlife clubs in Africa

Twenty-seven percent (n=4) of club programs responded that they did not use any formal methods of evaluation. Evaluation methods used by 33% (n=5) of programs included visits to the clubs and questionnaires. Twenty-seven percent (n=4) used growth in the number of clubs and observation of activities as tools for data collection, while 20% (n=3) used interviews. Other evaluation methods or indicators used included demand for

services (13%, n=2) and club reports (13%, n=2). Additional methods or indicators cited by 7% (n=1) of wildlife club programs were before and after program tests; participatory evaluation; external consultants; number of materials distributed; meetings; and number of supportive donors.

Discussion

History, Membership, Funding, and Administrative Structure

The 1970s and 1980s saw a rapid proliferation in the number of African countries adopting the wildlife club model. In Africa, the theme of "wildlife" held great appeal in the 1970s, as international attention focused on anti-poaching efforts to protect Africa's charismatic species. Of note, eight of the 15 country programs in this study refer to their clubs as "conservation" or "environmental" clubs, as opposed to wildlife clubs, to reflect a broader focus on environmental issues other than wildlife in today's conservation setting.

Both the case study of WCK and the survey results reflect the challenges in monitoring "active" clubs and current membership of the wildlife club programs. By default, an active wildlife club usually is defined by payment of membership dues, but this variable does not always reflect active status. This reality emphasizes the need to define other indicators of an active club and develop systematic methods for monitoring such variables. Some club programs such as Uganda and Kenya have made strides in tracking membership through computer spreadsheets.

The survey results reveal that the majority of clubs are dependent on external donors for their financial support. The need for financial sustainability remains an acute issue for wildlife club programs throughout Africa.

Primary Activities and Delivery Systems

The results from this study show similarity in primary activities of the wildlife club programs, such as tree planting and tree nurseries; trips to parks and reserves; art, drama, and poetry; and clean-ups. A unique aspect of the wildlife club movement is the popularity of activities such as art, drama, and poetry (67% of survey respondents) for expressing conservation themes by youth. Wildlife clubs thus are meeting an important component of environmental education by using interdisciplinary instructional strategies. The historical perspective provided by the case study of WCK reveals that these same activities were conducted in the early days of wildlife clubs, although the conservation messages differed.

A revealing finding is that wildlife clubs in Africa rely on traditional delivery systems, as opposed to mass media. Ninety-three percent of wildlife club programs use club magazines and newsletters as a delivery system. This finding contrasts with studies showing mass media as the primary source of environmental information for youth in developed countries (Blum 1987).

Primary Impacts and Benefits to Students

Increased awareness and knowledge among students was seen as the primary impact of wildlife clubs by 73% of survey respondents and 56% of WCK staff. Other important impacts included the influence on students' career choice, enhanced student participation in conservation, and the influence on environmental policy. Wildlife clubs in Africa have impacted a generation of people and policies involved in conservation. The student who helped to establish the Wildlife Clubs of Uganda, for example, now serves as a member of the natural resource committee in the Ugandan Parliament.

This study reveals a primary focus of wildlife clubs on awareness and knowledge of conservation. The finding may also reflect the difficulty in measuring long-term changes on behavior as a result of environmental education programs. Regardless, the finding points to the need for wildlife club programs to integrate critical thinking and conservation action into their objectives.

An emphasis within the field of environmental education has been the development of critical thinking skills about environmental issues (Chiras 1992; Ramsey 1993). Recent guidelines for excellence for environmental education materials include an emphasis on critical and creative thinking and application of skills to environmental issues (NAAEE 1998). Training for staff and teachers with wildlife clubs on these current pedagogical methods could promote a focus on critical thinking skills.

The primary benefit to students of wildlife clubs was trips to parks and reserves, as cited by 67% of the wildlife club programs. The main entry into their county's national parks for students is through wildlife clubs because of transportation and park fee waivers. Promotion of domestic tourism remains a vital challenge for the national parks in most African countries. Wildlife clubs represent an important vehicle for promoting domestic tourism across Africa.

Constraints and Success Factors

Eighty percent of clubs surveyed noted lack of funds and resources as the primary constraint, a reality echoed in the WCK case study. The lack of financial and organizational sustainability are major issues facing wildlife clubs today. Funding for wildlife clubs from donors is typically for specific short-term projects.

Lack of staff retention and teacher transfers also threatened organizational sustainability in half the clubs. In many cases, qualified staff leave their positions with

wildlife clubs for better salaries with larger conservation organizations. At the club level, transfers of teachers who are club leaders can turn an active club into a dormant club overnight.

Formal networking opportunities such as annual conferences could provide a forum for training in creating endowment funds for financial sustainability. Programs such as WCK could provide lessons in starting an endowment fund, gaining donor support, and investing for the future.

Increased salaries for staff would address the issue of staff retention, but the obvious constraint is lack of funds. Unfortunately, donors fund projects, rather than salaries, which compounds the problem. In the absence of funds, administrative staff of wildlife clubs may benefit from training in human resource management, so that the efforts of qualified staff are recognized and appreciated.

At the club level, students should receive training from WCK staff or teachers in strategies for maintaining an active club with the departure of teachers or strong student leaders. Such strategies could include methods for recruiting a new teacher, as well as conducting membership drives among students.

Despite their constraints, wildlife clubs have prospered due to success factors such as stakeholder support and commitment of staff, teachers, and students. Teachers who were once wildlife club members lead clubs as adults. Staff who work with wildlife clubs were once club members as students. And wildlife club staff who leave for other organizations continue to support the efforts of the clubs. Building on this support is key to ensuring the continued growth of the wildlife club movement.

Recommendations for Improvement

Communications emerged as a major area for improvement among the wildlife clubs participating in this study and with WCK. Half the clubs recommended improved networking among wildlife clubs in Africa, while WCK staff recommended improved communication between the offices and individual clubs, and among staff.

The only formal gathering of wildlife club programs throughout Africa occurred in 1996 in Malawi and was organized by the International Centre for Conservation Education in the U.K. Clearly, as clubs are reporting similar problems and opportunities, the need for regular meetings is acute. One survey respondent suggested a network of wildlife club programs that have Internet access.

Networking opportunities through formal meetings would promote capacity building for financial and organizational sustainability and training in environmental education approaches. Formal networks of representatives from wildlife club programs also would strengthen partnerships for fundraising on a regional level in Africa. This strategy could serve as a mechanism for implementing the recommendation for improved public relations, as noted by 20% of respondents.

Evaluation Methods

The majority of wildlife club programs do not implement systematic monitoring and evaluation of their programs. As Elizabeth Chadri noted in her address to the 1996 Wildlife Clubs conference, no comprehensive evaluation exists of the club methods and processes of promoting conservation education and the institutional structures developed to support this work. The survey results reveal that wildlife clubs use a variety of data collection tools to assess their programs, but do not implement systematic evaluation as a part of on-going program operations.

Only one program noted an "evaluation system" in use. The Wildlife Clubs of Kenya conducted trainings and implementation of participatory evaluation in 1997-1998. In addition, a staff member in Namibia received funding to conduct an evaluation of club activities in 1998 through interviews and club visits.

The recent national and regional trainings at Wildlife Clubs of Kenya has shown that teachers and staff are effective at generating common indicators for assessing the success of wildlife club programs. The results from this survey revealed that respondents use a similar suite of methods and indicators, but lack an organized *system* for documentation and monitoring of results. Capacity building in evaluation at an annual forum could provide the means for developing a set of common indicators, evaluation questions, and data collection methods. Without measuring the success of clubs, the wildlife club movement risks at best repeating traditional activities without assessing their effectiveness. At worst, wildlife clubs risk the danger of replicating failure, rather than success (Jacobson and McDuff 1997).

Wildlife Clubs in Africa: Constancy, Change, and Directions for the Future

Many of the wildlife club movements in Africa have survived organizational upheaval, often related to issues such as staffing, funding, and political climate. For example, Sierra Leone recently re-opened their wildlife club office after political instability. Wildlife Clubs of Kenya rebuilt its financial basis by reducing staff and creating an endowment fund. These survival skills are a testimony to the strength of grassroots conservation organizations in involving youth in environmental issues over time, as well as operating under limited resources.

The results from the case study and surveys reflect the findings in the growing body of literature on significant life experiences leading to environmental interest and

action. This study provides strong evidence of the role of wildlife clubs in providing those significant life experiences that include outdoor experiences, role models, study of natural systems, youth organizations, and career opportunities (Chawla *in press;* James 1993; Palmer 1993; Peterson 1982; Sobel 1998; Sward 1996).

Wildlife clubs in Africa meet a need for an institution capable of providing these critical variables that shape environmental sensitivity and consequently, environmental action. Given that environmental education has not been integrated into the curriculum in most countries, wildlife and environmental clubs have played a crucial role in influencing environmental attitudes at an early age.

The issues addressed by students in wildlife clubs across Africa have mirrored trends in conservation from the 1960s to the present. The wildlife club movement in Kenya is best known for its street demonstrations against poaching in the 1970s. In 1998, students protested the use of plastic bags for shopping, and marched past piles of uncollected garbage in the streets due to inadequate funding for solid waste management in the country.

As a grassroots non-governmental organization, WCK has been adept at transforming international and national conservation issues to the local level. In the year preceding the Fourth World Conference on Women, held in Beijing, WCK made serious efforts to increase the participation of girls in their activities through their Young Women and Biodiversity Conservation theme. In 1998, WCK echoed the mandate of Kenya Wildlife Service to increase community participation in conservation by promoting this theme at both the national and regional level.

The efficacy of this constancy in instructional strategies over time has been debated within WCK. "I think we may be in a small crisis now since we've been repeating

the same activities for years and years," said education staff member Alice Makio. "Every year, we have rallies and workshops, rallies and workshops." Some staff members disagree: "We need to be current with the conservation issues, but the students still get motivated by activities such as rallies, seminars, and trips," said Jane Nguti.

Some WCK staff argue that wildlife clubs have lost their activism and role in the public eye. Others maintain that today's environmental issues are more diffuse than the clear-cut crisis of poaching in the 1970s. Staff members noted that the public perception that WCK is repeating the same messages may stem from a public relations problem, rather than an organizational problem. They cited the need to educate other conservation groups about current activities within WCK that do reflect the changing times. WCK also held a strategic planning workshop in January 1999 with wildlife clubs from Tanzania, Uganda, and the Seychelles to brainstorm an agenda and direction for the future of WCK.

Building regional and local capacity in the future for wildlife clubs throughout Africa will require a strong strategic plan and mission for wildlife clubs as a whole, as well as effective communication throughout the organization. The reality is that the majority of these programs operate in contexts where limited staff, funding, and infrastructure hinder communication efforts.

Despite the lack of resources, wildlife clubs are making an impact in conservation. The results from the interviews with WCK staff members and the surveys attest to the role of wildlife clubs on an individual level in influencing students' attitudes toward conservation and even their career choices. On a policy level, WCK is currently working with the Ministry of Education to formulate a national environmental education strategy. Thirty-three percent of wildlife club programs surveyed noted influence on environmental policy and policy makers as their primary impact.

Given the findings from this study, support for wildlife clubs in Africa must continue. However, wildlife clubs across African must become "adaptive" organizations (Gunderson, et al. 1995) so that national offices, regions, and local clubs can adapt their strategies to changing times and environmental issues. Participatory evaluation will provide data for adaptive management of wildlife clubs and enhance institutional learning through hypothesis testing and experimentation. Systematic needs assessment at multiple organizational levels (national, regional, local) should be conducted to assess the needs that can be met by wildlife clubs and the appropriate instructional strategies. These efforts will result in more effective programming across Africa.

To increase its effectiveness, especially with limited resources, wildlife clubs must enhance their public profile through public relations and effective networking with other organizations. The environmental arena today in Africa consists of a proliferation of conservation groups, many working in environmental education. In Kenya alone, a 1993 inventory of environmental organizations listed 45 non-governmental organizations, parastatals, and government agencies conducting environmental education programs (KIFCON 1993).

Collaboration could reduce the duplication of efforts, as well as streamline resources and outputs. The advantage held by wildlife clubs is their reputation in Africa as the primary organization dealing with conservation for youth. Tapping into that strength through partnerships will create a strong investment for the future (Rocha and Jacobson in press).

Involvement in wildlife clubs sparked the environmental interest of students who became the current leading conservationists across Africa. But times have changed from the ardent anti-poaching messages of the 1970s. The issues and challenges facing

members of wildlife clubs today are more complex, especially in light of the difficult economic and political situations in many African countries. Many wildlife club members who want to pursue careers in conservation cannot due to lack of jobs in their countries.

Despite the complexities of today's conservation arena, the history of wildlife clubs and the motivation of its stakeholders stands as its greatest asset. Examples of individual and organizational commitment remain the strength behind wildlife clubs. However, the challenge for the future lies in channeling this commitment into effective and efficient educational strategies that promote conservation.

As one survey respondent noted, "We have to move beyond asking all these how questions (what structure, what factors) and start asking other questions. What are we hoping to achieve through clubs? Does it contribute to environmental education and conservation? Is this the most effective way to educate youth in conservation?"

The answers to these questions lie in the collective knowledge of all wildlife club programs, the conservation community, and local stakeholders affected by specific environmental issues. Partnerships both inside and outside the wildlife club programs can address the strategic plans for the future and document the impacts along the way. Only through such systematic planning and monitoring can we hope to promote the success of wildlife clubs and ensure that youth play an informed role in conservation issues of today and tomorrow.

Table 3-1. History of the Wildlife Clubs of Kenya

Date	Events
1960s-1970s	• WCK formed at Kagumo High School by 12 schools that attended first student seminar. Support for clubs given by Kenya's Ministry of Tourism & Wildlife, the National Museums of Kenya, and NGOs such as the East African Wildlife Society (1968). • WCK becomes registered non-profit organization with constitution. Richard Leakey elected chairman of governing council (1969). • Trustees of the Kenya National Parks waive park entry fees for Wildlife Club members (1970). • WCK radio show broadcasts 105 programs over next five years (1970-1975). • First student seminar held as field-based training in Tsavo East National Park (1970). • # of wildlife clubs grows to 123 (1971). • WCK holds anti-poaching demonstrations (1973,1977). • WCK newsletter renamed as Komba magazine for the WCK bushbaby logo. (1978) • WCK begins leasing education center & hostel in Rift Valley at Nakuru National Park (1978).
1980s	• Regional office in Kisumu on Lake Victoria opened (1980). • Hostel and education center opened in Nairobi (1985). • Advisory management committee headed by David Western charged with restructuring organization and assessing WCK activities (1985). • WCK wins domestic tourism award for taking more than 6,000 students in parks (1986). • WCK wins UNEP Global 500 Honor Roll for achievements in conservation (1987). • David Western becomes chairman of governing council. • 1,600 clubs have been members of WCK, but only 25% renewed membership in 1987. • WCK celebrates 20th anniversary (1988).
1990s	• WCK faces financial debts (1990). • New national coordinator hired to restructure WCK and restore donor confidence (1990). • Donors fund strategic planning workshop to rebuild organization (1990 & 1992). • Staff cut and WCK decentralized with regional action groups of elected teachers to coordinate local and regional events (1991). • WCK office moves from National Museums of Kenya toWCK EE center (1991). • Endowment fund created (1993). • WCK initiates annual conservation themes, such as Wetlands (1993), Indigenous Trees & Forests (1994/95) and Young Women & Biodiversity Conservation (1996/97). • Teacher training workshops held to build capacity of teachers to organize regional students seminars on conservation themes (1992, 93, 94, 95). • WCK begins Ecology program in Nairobi National Park (1993). • Regional offices opens in Eastern region (1997) and Coast region (1993) • Workshop held for pastoralist women on environmental lobbying (1997). • Workshop held for school inspectors on "Using Parks for Education" and "EE in the curriculum" (1996, 97). • Staff and teacher workshops held on participatory evaluation for EE (1997,98). • WCK launches Marine Ecology program in Coast region (1998).

Table 3-2. Programmatic focus of the Wildlife Clubs of Kenya: 1960s-1990s

Years	Focus/issues	Methods
1960s-1970s	**Environmental focus**	
	• Wildlife/environmental awareness	• Art & essay competitions, drama, student rallies, radio program, Komba newsletter, book publication (*How the Zebra got its Stripes)*, newspaper
	• Anti-poaching	• Demonstrations, campaigns, letters to government officials
	• Exposure to national parks/ conservation skills	• 5-day student field training courses, club trips
	• Local environmental action	• Tree planting, wildlife study, research projects, nature trails, club museums
	Organizational focus	
	• Building organization & membership	• 1st student seminar, letters from headquarters to clubs, Mobile Education Unit, competitions for WCK logo & motto, creating governing council, publishing student articles in Komba
	• Creating national & international support	• Building partnerships with donors, government officials, and conservation organizations
	• Disseminating WCK model	• Training other countries in WCK model, participation in international conferences
	• Teacher and student training	• Annual teacher workshops and student seminars (field courses)
1980s	**Environmental focus**	
	• Wildlife/environmental awareness	• Art & essay competitions, drama, student rallies, Wildlife Awareness Week, newspaper, Komba magazine, Mobile Education Unit
	• Anti-poaching	• Wildlife club action groups in regions to promote anti-poaching, articles in Komba
	• Exposure to national parks	• 5-day student seminar in parks
	• Local environmental action	• Tree planting, soil erosion, water conservation, tree nurseries, birdwatching
	Organizational focus	
	• Building adult/associate membership	• Bulletin for associate members (6 times/year), Focus on Uvumbuzi club (adult wildlife club)
	• Advisory Management Committee recommends streamlining and focus on club projects	• Development officer hired for fundraising & public relations
	• Teacher and student training	• Annual teacher workshop & student seminar

Table 3-2--continued

Years	Focus/issues	Methods
1990s	**Environmental focus**	

	• Annual environmental themes
	  • Community conservation
	  • Wetlands
	  • Indigenous trees & forests
	  • Young women & biodiversity conservation
	  • Community participation in conservation
		• Teacher workshops on themes and student seminars, student rallies, publications, art & essay competitions, drama

	• Pollution	• Public demonstrations & campaigns ("Use Baskets, not Plastics"), drama, clean-ups • Community workshop for women
	• Women & environmental lobbying • Local & regional environmental action	• Tree planting, tree nurseries, clean-ups, coastal conservation, removal of water hyacinth,
	• Exposure to national parks	• One-day Ecology programs (Nairobi National Park & Marine Ecology program)
	• Environmental awareness	• Art & essay competitions, drama, student rallies, Komba magazine, newspaper, Mobile Education Unit, book publication (*Trees, Myths, & Medicines)*
	Organizational focus	
	• Organizational restructuring • Financial sustainability • Training of trainers approach • Participatory evaluation	• Downsizing, decentralization • Creation of endowment fund, financial controls • Teachers trained to organize student seminars • Training for staff and teachers in participatory evaluation of EE programs

Table 3-3: Membership and funding of wildlife clubs

COUNTRY	# of registered clubs 1997	Funding
Botswana	620	Department of Wildlife and National Parks, international donors such as GEF, small grants
Ethiopia	50	British Embassy
Ghana	500	Royal Society for Protection of Birds, UK, GEF, membership dues, hiring of bus & sales, other donors
Kenya	800	Donors such as African Fund for Endangered Wildlife, British Council; Kenyan govt, endowment fund, membership fees
Malawi	1000	Donors such as UNICEF, membership fees, local fundraising
Namibia	80	USAID administered through Rossing Foundation (ends 1998), Ministry of Environment & Tourism, Namibia Nature Foundation
Nigeria	450	International conservation agencies and corporate sector
Seychelles	20	Donations and contributions from club members
Sierra Leone	40	Royal Society for Protection of Birds, UK, local NGOs, and businesses
South Africa	370	International donors, national corporate sector, membership fees
Swaziland	30	International donors, local business community, membership fees, fundraising
Uganda	200	USAID, UNDP, GEF, IUCN, World Wide Fund for Nature
Zambia	500	Donors such as WWF, German Development Service; local corporate sector, sales of publications
Zanzibar	13	International donors, membership fees, government, local fundraising
Zimbabwe	50	Donations and membership fees
	Mean = 315 clubs	

Table 3-4: Administrative structure of wildlife club organizations

COUNTRY	Administrative structure (Note: HQ = headquarters)
Botswana	Administered through the Department of Wildlife and National Parks
Ethiopia	Administered by Ethiopian Wildlife and Natural History Society & Ministry of Education
Ghana	Junior wing of Ghana Wildlife Society--4 staff work directly with WCG
Kenya	HQ in Nairobi and 4 regional offices; total staff of 25, including coordinator, education and support staff. Regional action groups of teachers coordinate activities. Governing Council of donors/conservationists and executive committee.
Malawi	No formal HQ; Clubs administered by Wildlife Society of Malawi, whose secretariat maintains membership.
Namibia	Rossing Foundation EE program staffs a coordinator for club support services, but no formal administrative structure for club network
Nigeria	Nigerian Conservation Foundation education department has state education coordinators, then zonal club leaders and club patrons
Seychelles	Elected club leaders form executive committee. No full-time staff. No membership fees.
Sierra Leone	Administered by Conservation Society of S.L. & Gola Rainforest Conservation Program; HQ in Freetown with senior education officer & 2 education officers in Eastern region (3 staff total). Other regions managed by volunteer teachers
South Africa	Part of Wildlife & Environment Society of South Africa. 8 club coordinators across country (6 part-time/1 full/1 volunteer). 1 national coordinator.
Swaziland	5 staff at HQ; national coordinator, public information officer, community education officer, schools program officer, and assistant; Executive committee
Uganda	10 staff. General Secretary, district chairpersons, and governing council. Board of trustees. Under patronage of Minister of Tourism, Wildlife, & Antiquities.
Zambia	Education wing of the Wildlife Conservation Society of Zambia. 9 staff at national office.
Zanzibar	No permanent office or organization. Assistance from Department of Environment.

Table 3-5. Primary activities of wildlife clubs

Activity Category	Botswana	Ethiopia	Ghana	Kenya	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Tree planting and nurseries		X	X	X	X	X	X		X	X	X	X	X	X	X	13
Student trips to parks/reserves		X	X	X	X	X		X	X		X	X	X		X	11
Art, drama, poetry		X	X	X	X		X	X	X		X		X	X		10
Clean-ups and beautification		X		X	X	X	X		X	X	X	X		X		10
Publication of club magazine, resources	X	X		X					X			X	X			6
Environmental rallies and campaigns	X			X				X	X	X		X				6
Workshops for teachers/students		X		X				X				X	X			5
Environmental monitoring and research		X						X					X	X	X	5
Recycling						X	X			X	X					4
Debates		X	X		X											3
Gardens									X		X			X		3
Fund-raising activities	X				X					X						3
Mobile education unit				X								X				2
Weekly radio show													X			1
Birdwatching			X													1
Field-based ecology programs				X												1
Videos/films	X															1

Table 3-6. Primary impacts of wildlife clubs

Impact Category	Botswana	Ethiopia	Ghana	Kenya	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Increased environmental awareness/knowledge		X	X	X	X		X	X	X		X	X	X	X		11
Student participation in conservation		X					X	X		X	X			X		6
Tree planting and nurseries		X		X	X				X			X			X	6
Club members pursue conservation careers	X		X	X								X	X		X	6
Influence on policy makers and policy			X	X			X				X			X		5
Involvement of parents and community	X		X	X						X				X		5
Providing resource materials to schools							X		X	X						3
Student visits to parks					X										X	2
Decreased incidence of trapping shorebirds			X													1
Change in community attitudes/behaviors											X					1
Increased water conservation											X					1
Improved farming methods											X					1
First wildlife clubs model for other countries				X												1
EE Recognized in formal education	X															1

Table 3-7. Benefits of wildlife clubs to students

Benefit Category	Botswana	Ethiopia	Ghana	Kenya	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Trips to parks/reserves		X	X	X	X	X		X			X	X	X		X	**10**
Increased knowledge/skills in conservation	X		X	X	X		X							X	X	**7**
Educational materials and magazines				X						X	X	X	X			**5**
Involvement in conservation			X					X	X		X		X			**5**
Free entry to parks	X		X	X								X			X	**5**
Interaction with other students			X	X		X								X		**4**
Experience leading to conservation career					X				X							**2**
Video/films				X								X				**2**
Training/workshops	X										X					**2**
Certificates/trophies		X														**1**
Hostel facilities				X												**1**
Funds for small-scale projects											X					**1**

Table 3-8. Constraints and success factors for wildlife clubs

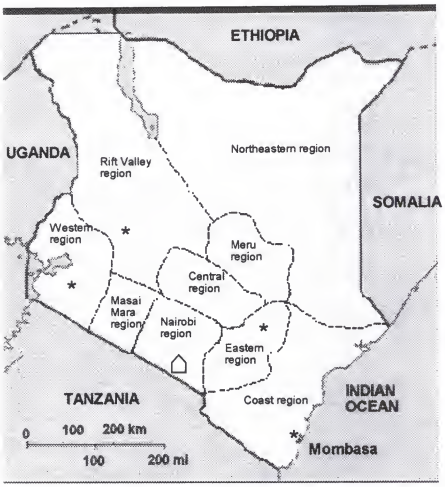
Category	Botswana	Ethiopia	Ghana	**Kenya**	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Constraints																
Lack of funds and resources		X	X	X	X	X		X	X		X	X	X	X	X	**12**
Teacher/staff retention and transfers		X	X	X			X	X	X			X				**7**
Lack of training for teachers & staff					X	X				X	X			X		**5**
Communication with clubs				X		X							X		X	**4**
Lack of time in curriculum				X			X			X						**3**
Shortage/lack of staff							X	X					X			**3**
Dependence on volunteers	X					X						X				**3**
Lack of transport					X									X		**2**
Lack of support from school administration				X												**1**
Lack of permanent office													X			**1**
Political instability							X									**1**
Shifting donor objectives	X															**1**

Table 3-8--continued

Category	Botswana	Ethiopia	Ghana	Kenya	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Success factors																
Stakeholder support	X			X			X	X			X	X	X			7
Commitment of staff, teachers, students	X			X				X			X	X		X		6
Staff visits to clubs			X		X									X	X	4
Workshops for teachers/students			X					X	X		X					4
Publicity/mass media		X					X						X			3
Providing resource materials to clubs	X		X		X											3
Student trips to park			X												X	2
Model program				X									X			2
Having national EE strategy							X									1
Incentives for active clubs									X							1
Regional club coordinators										X						1
Increased funding										X						1
Funding for local projects	X															1

Table 3-9. Recommendations for improvement of wildlife clubs

Recommendation Category	Botswana	Ethiopia	Ghana	Kenya	Malawi	Namibia	Nigeria	Seychelles	Sierra Leone	South Africa	Swaziland	Uganda	Zambia	Zanzibar	Zimbabwe	N=15
Enhanced networking among clubs					X				X	X	X	X	X	X		7
Increased communication with clubs			X	X			X			X						4
Incentives for teachers			X					X	X							3
Improve publicity/public relations				X			X						X			3
Increased training for teachers/students			X											X		2
Strategic planning for future direction of clubs						X						X				2
Focus clubs on grassroots community level	X	X														2
Motivation for staff			X													1
Long-term projects for clubs								X								1
Integrate EE in curriculum													X			1
Strengthen economic foundation for clubs												X				1
Enhance accountability												X				1
Decentralize													X			1
Increased AV equipment															X	1
Increase support from local authorities	X															1



* = regional office
⌂ = headquarters

Figure 3-1. Map of the Wildlife Clubs of Kenya regions

Figure 3-2. Location and founding dates of wildlife club programs in study

Growth in number of registered wildlife clubs: 1968-1997

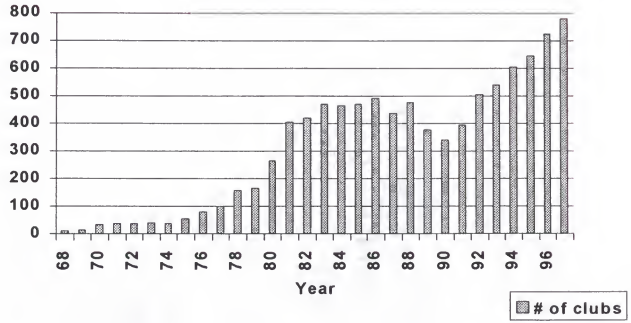


Figure 3-3. Growth in WCK membership (1968-1997)

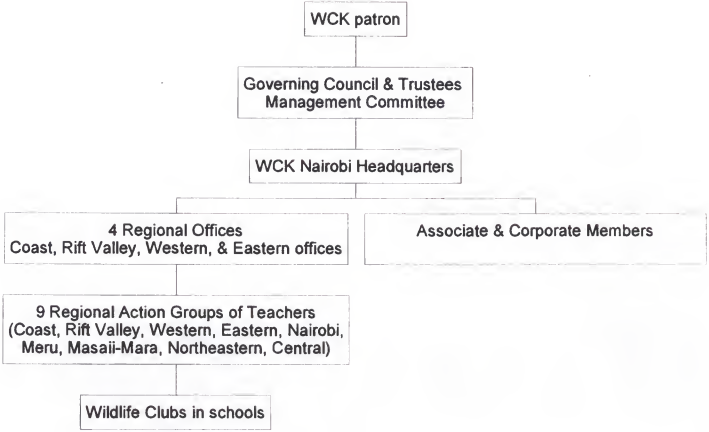

WCK patron
Governing Council & Trustees
Management Committee
WCK Nairobi Headquarters
4 Regional Offices
Coast, Rift Valley, Western, & Eastern offices
Associate & Corporate Members
9 Regional Action Groups of Teachers
(Coast, Rift Valley, Western, Eastern, Nairobi,
Meru, Masaii-Mara, Northeastern, Central)
Wildlife Clubs in schools

Figure 3-4. Organizational structure of WCK

CHAPTER 4
BUILDING THE CAPACITY OF GRASSROOTS CONSERVATION ORGANIZATIONS TO CONDUCT PARTICIPATORY EVALUATION

"I've worked so hard to get Kenyan girls involved in conservation through the Young Women and Environment Program. But have we made any difference? I would give anything be able to answer this question."
Alice Makio, Programs assistant, Wildlife Clubs of Kenya

"the critical element in evaluation is simply: who has the right, i.e., the power, the influence, or the authority to decide."
Weekworth 1969, p. 48

Introduction

Many innovative conservation and natural resource management projects have occurred at the grassroots level by involving local stakeholders in conservation initiatives (Bennun et al. 1995; BSP 1996; McNeely 1995; Western et al. 1994). Indeed, local participation has grown from a buzzword to a mandate required for the funding and implementation of most conservation projects. The conservation community has made significant strides in promoting public participation in the planning and implementation of conservation projects (e.g., Decker et al., 1996; IIED 1994; Stout et al., 1992; Wells and Brandon 1992).

Despite these advances, most conservation organizations revert to traditional models when the time for program evaluation arrives (Abbot and Guijt 1998). The majority of program evaluations of conservation programs are conducted by consultants or outside researchers, rather than through *participatory* evaluation which involves project

stakeholders (Grundy 1997). These evaluations are driven more by donor criteria and demands for accountability, than by local needs and long-term interest in program improvement (Carden 1997). Too often, systematic evaluations of conservation programs are not conducted at all (Margoluis and Salafsky 1996; Larson and Svendsen 1996).

In traditional evaluation, systematic monitoring usually ends when the researcher or consultant leaves the project site (Abbot and Guijt 1998; Goldsmith 1991). In the conservation arena, the results from evaluation reports often remain on the shelves of donor offices or headquarters, rather than in the hands of those who implement programs in the field. Thus, results from project evaluations are not used for program improvement at the local level.

Shortcomings cited by critics of traditional evaluations include the following: (1) a narrow focus on evaluation questions derived by program planners or donors; (2) collection of data unresponsive to the needs of program participants; (3) disproportionate focus on concerns of project administrators; and (4) dissemination of results that are not used (Cousins and Earl 1992; Eash 1985; Weiss 1983).

Given the use of traditional evaluations, the majority of grassroots conservation organizations have not integrated on-going systematic program evaluation into their institutional framework (Abbot and Guijt 1998). Indeed, many of these organizations must fight for limited available financial resources. Program implementation thus remains a much higher priority than program evaluation. As mandated by donors, evaluation becomes a required section in funding proposals, but an afterthought in real-life settings.

This lack of local capacity for evaluation creates an enormous gap in data on the overall effectiveness and impacts of conservation initiatives. In addition, the lack of

involvement of stakeholders in program evaluation results in missed opportunities for systematic evaluation to guide sustainable program improvement based on local knowledge and interest.

The need for accountability in natural resource management projects has prompted increased interest in program monitoring and evaluation within the conservation community (Abbot and Guijt 1998; Larson and Svendsen 1996; Margoluis and Salafsky 1996; WCS 1995). An acute need exists to integrate participatory evaluation into conservation programming to enhance the capacity of conservation organizations to conduct program evaluation.

This study addresses the issue of building the capacity to conduct *participatory* evaluation with the Wildlife Clubs of Kenya, the largest grassroots conservation organization for youth in Africa. Participatory evaluation represents an innovative and pragmatic approach for implementing systematic program monitoring. The method involves collaboration and training of local stakeholders in evaluation design, identification of indicators, data collection, analysis, and use of results. Local training in evaluation allows on-going collection of data relevant to both conservation and local needs--thus increasing the use of results for program improvement.

The advantages of participatory evaluation include increased validity and utilization of results, improved communication between funding agencies and local partners, enhanced local capacity for decision-making, and cost-effective strategies for ongoing assessment (Bryk 1983; Feuerstein 1986; Greene 1987b; Jackson and Kassam 1998; Johnson 1995; Narayn-Parker 1993; Pfohl 1986; Rugh 1994; Weiss 1983).

The Wildlife Clubs of Kenya (WCK) presents an ideal case study for building the capacity of a grassroots organization to conduct participatory evaluation. In 1968, WCK began with a meeting of Kenyan students from 12 secondary schools who were interested in learning about the wildlife of their country and traveling to their national parks to observe this wildlife in its natural habitat.

WCK was the first environmental education program of its kind in Africa and served as a model for the formation of youth conservation organizations in Africa, India, and Asia. With a national headquarters in Nairobi, WCK has four regional offices in Kenya with education staff who organize activities for wildlife club members in individual schools. At the school level, a volunteer teacher leads students in activities such as trips to parks, clean-ups, environmental campaigns, art competitions, and environmental monitoring. WCK spans a 30-year history involving more than one million youth. In 1997, 780 wildlife clubs registered as members of this youth conservation organization.

The goals of WCK are to:

- spread interest and knowledge about wildlife, the environment, and natural resources
- make Kenyan youth and the general public aware of the economic, cultural, social and aesthetic value of natural resources
- develop a better understanding of the need to conserve wildlife and other natural resources for the benefit of the nation and its people.

The Wildlife Clubs of Kenya has influenced a generation of conservationists since its inception. Many Kenyan leaders in conservation began their interest in conservation with membership in the wildlife club at their secondary school. Despite its 30-year history,

WCK did not have a system for ongoing monitoring and evaluation of impacts or program effectiveness.

This study addresses how a grassroots conservation organization with no history of systematic program evaluation institutionalizes such a process into programming. A conceptual model for participatory evaluation of conservation programs is applied to the Wildlife Clubs of Kenya to build organizational capacity in monitoring and evaluation.

This study examines (1) a literature review of participatory evaluation and a participatory evaluation model, (2) needs assessment of evaluation at the Wildlife Clubs of Kenya (WCK), (3) capacity-building in participatory evaluation, and (4) institutionalization of participatory evaluation at WCK.

Review of Participatory Evaluation

Development of Participatory Evaluation

Participatory evaluation developed in response to the constraints of traditional evaluation models, as well as the growth in participatory research methods. In the field of community development, for example, participatory evaluation emerged from the theoretical perspectives of work by Paolo Freire (1972), farming systems perspectives developed by Amanor (1990), and rapid rural appraisal and participatory rural appraisal (PRA) methods advanced by Robert Chambers (1997). As development practitioners integrated local participation into project planning, the need for participatory strategies in monitoring and evaluation became apparent. In addition, conventional project evaluations by donors were not meeting the needs of project stakeholders (Carden 1997; UNDP 1997).

Within the field of public education, participatory evaluation draws from the traditions of evaluation models such as Stake's (1983) responsive evaluation, Guba and Lincoln's (1985) fourth-generation evaluation, Parlett and Hamilton's (1978) illuminative evaluation, and Patton's (1978) utilization-focused evaluation. In educational evaluation, criticisms of traditional evaluation methods also served as a springboard for the development of participatory evaluation. Table 4-1 presents essential differences between conventional evaluation and participatory evaluation (Narayan-Parker 1993; Sick and Shapiro 1991; Tandon 1981).

Participatory evaluation has experienced its most rapid growth in the late 1990s in projects ranging from sustainable agriculture to literacy (Estrella and Gaventa 1998). A variety of terms have been used to describe different participatory monitoring and evaluation approaches, such as: self-evaluation (Rugh 1986); participatory assessment, monitoring and evaluation (Davis Case 1990; Maine et al. 1996); citizen monitoring (Community Partnership Center 1998); stakeholder-based evaluation (Bryk 1983); participatory evaluation (Zacharakis-Jutz 1994); beneficiary assessment (Valdez and Bamberger 1994); semiotic evaluation (Tucker and Dempsey 1991); auto-evaluation (Roche 1993); and participatory impact assessment (Kar 1997).

Participatory evaluation has been defined in a number of ways. For example, Abbot and Guijt (1998) describe participatory evaluation as monitoring and evaluation approaches that involve partnerships of multiple stakeholders. Narayn-Parker (1993) defines participatory evaluation as collaborative problem-solving involving all levels of users in shared decision-making. Cousins and Earl (1992) view participatory evaluation as

applied social research that involves partnerships between trained evaluation personnel and program stakeholders.

An unresolved issue in participatory evaluation is the problem of synthesizing multiple perspectives that emerge in the evaluation process (House 1990). The negotiation of issues and indicators to guide an evaluation presents a challenge, especially in politically sensitive programs with status differences among stakeholders or shifting power relationships. Most researchers posit a process of negotiation, but more attention in the literature is needed to address this point.

Another challenge with participatory evaluation is involving program participants who are not trained program evaluators. As Murray (1983, p. 60) notes, "If the elegant experimental design and tightly controlled data base constitute the Mercedes of evaluation, the stakeholder evaluation is the tractor. You can plow a lot of fields, but don't expect it to corner well." Other potential constraints include lack of generalizability and sustainability of evaluation methods.

Case Studies from the Literature

A literature review of participatory evaluation was conducted as a foundation for applying participatory evaluation to conservation. Estrella and Gaventa (1998, pg. 5) note that the diversity of unpublished and published literature on participatory evaluation make "a comprehensive state of the art review impossible." Indeed, many documents pertaining to participatory evaluation exist in the "grey" literature of project reports.

The objective of this review was to compile the literature on participatory evaluation that could be accessed through databases, workshop proceedings, and library searches. The case studies in this review were compiled through the following sources:

databases such as Current Contents, ERIC (1988-present), Academic (1988-present), Business (1988-present), Books in print; workshop proceedings including the 1997 International workshop on participatory monitoring and evaluation in the Philippines; published literature in the Institute for Development Studies PRA database; and studies in the Institute for Development Studies PM&E Introductory Pack.

A total of 111 studies are included in the matrix in Table 4-2. The studies represent the following fields: community development (n=46), agriculture (n=18), health, including water and sanitation (n=16), public education (n=11), natural resources (n=10), forestry (n=5), literacy (n=2), women's studies (n=1), and extension (n=1). In addition, two review articles are included in the matrix. The studies reflect evaluations conducted in 83 developing countries in Asia, Africa, Latin America, and the Caribbean, and 28 in "developed" countries of the U.S., Canada, the U.K., and Australia. The review reveals the dominance of participatory evaluation in the field of community development, represented by 41% of the studies. In comparison, only 9% of the studies found in the literature involved participatory evaluation of natural resource programs.

The matrix presents recommendations and findings from the 111 studies, which were analyzed to provide input into the development of the participatory evaluation model for this study (Table 4-3).

Conceptual Model for Participatory Evaluation of Conservation Programs

A synthesis of recommendations from the literature led to the development of the following model for participatory evaluation of grassroots conservation organizations (Figure 4-1). Key findings from the literature that shaped the model and methodology of this study included: the importance of capacity-building and learning; the need to adapt

methods to local context and vocabulary; the involvement of multiple stakeholders; the use of evaluation results; identification and negotiation of indicators; and integration of participatory evaluation into all phases of the project cycle.

The model incorporates inputs from both project stakeholders and an external facilitator, with outputs including information for decision-making, increased evaluation skills, evidence of program impacts, areas for program improvement, and success factors and constraints. The model addresses the need for continuous internal evaluation by project staff and other stakeholders, with periodic external evaluation. The framework also includes identifying existing institutional structures and practices as a foundation for participatory evaluation.

Methods

Needs Assessment for Participatory Evaluation

The objective of the needs assessment was to examine past evaluation practices at the Wildlife Clubs of Kenya (WCK); perceptions of staff toward evaluation; and recommended strategies for building the capacity of the organization in monitoring and evaluation. The needs assessment was conducted from August-September 1997 and used the following methods for data collection: (1) semi-structured interviews with all 10 education staff within WCK from both headquarters and regional offices; (2) document review of past project reports, staff meetings, and annual reports; (3) participant observation; and (4) participatory rural appraisal (Slocum et al. 1995) tools including drawing, word association, and ranking.

The semi-structured interviews were pilot tested with two education interns at WCK. The interviews explored staff perceptions of evaluation, perceived needs regarding program evaluation at WCK, and prior involvement in evaluation.

Document review was used to collect data on past evaluation practices. The objective of participant observation was to assess current methods of monitoring and evaluating program effectiveness at WCK. Participant observation included attending all staff meetings at headquarters, participating in all educational programs, visiting regional offices, and attending WCK workshops for the period of the needs assessment.

Participatory rural appraisal (PRA) tools of drawing, word association, and ranking were used with the 10 education staff. Methods from PRA have been used extensively in natural resource management and community development to document perceptions and priorities at the grassroots level (Slocum et al. 1995).

In the drawing exercises, staff were given paper and markers and asked to draw the first image that came to their mind when they thought of the word "evaluation". Similarly for the word associations, they were instructed to record words associated with the term "evaluation".

The objective of the ranking exercise was to document the amount of time staff spent on monitoring and evaluation, as compared with other responsibilities. Ranking has been used as an effective method of quantifying variables in relation to one another from the perception of those in an organization (Davis Case 1990; Pretty et al. 1995; Slocum et al. 1995).

During the ranking exercises, individual staff members were given nine index cards. Each card represented one of the following stages in the project cycle or tasks they

might perform working with conservation programs: writing proposals; locating funding; designing the program; pilot testing the program; implementing or conducting the program; coordinating logistics of the program; documenting data to monitor program effectiveness; evaluating the program; and writing the final report. Staff were asked to rank the cards according to the amount of time they spent on each task in their job.

Capacity-Building in Participatory Evaluation

To build the organizational capacity within WCK in evaluation, a training of trainers approach (Eitington 1989) was designed in order to reach the largest number of stakeholders. This strategy involves training a core group of trainers who then help to facilitate additional trainings. A total of seven trainings was conducted for staff and teachers who lead wildlife clubs at the school level (Figure 4-2). The first training for the 10 education staff involved a one-week workshop on participatory evaluation from 29th Sept.-2nd Oct. 1997. The participants included the six staff from the Nairobi headquarters and four education officers from the regional offices.

A key component of the training was "field experience" that allowed the staff to evaluate the WCK Ecology program in Nairobi National Park. Another integral component of the trainings was the development of a monitoring and evaluation system for the organization, called the WCK Incentive Program.

The participants in the first workshop served as trainers for a subsequent one-week workshop for 17 teachers who are members of WCK action groups. The action groups are an elected group of teachers who coordinate regional activities for WCK. The second workshop was held from 30th Nov.-5th Dec. 1997. The goals and objectives of the one-week trainings are shown in Table 4-4.

The one-week workshops were followed by five one-day workshops with teachers who lead wildlife clubs at local schools in five different regions in Kenya. The action group members who participated in the one-week workshop served as facilitators for the regional workshops, which were held in the following regions: Meru region (7th Feb. 1998); Nairobi region (13th Feb. 1998); Coast region (21st Feb. 1998); Western region (26th-27th Feb. 1998); and Rift Valley region (11th March 1998).

In the Western region, the workshop lasted two days and included community members such as leaders of women's organizations who collaborate with WCK in the conservation of the Kakamega Forest in Kenya. In sum, 120 staff, teachers, and community members received training in participatory evaluation of WCK's conservation education programs. Participants for the workshops were chosen to represent the geographical diversity of WCK within the regions.

Pretest-Posttest Design to Measure Changes in Attitudes and Knowledge

A pretest-posttest design was used to measure changes in attitudes and knowledge regarding evaluation among participants in the training workshops. The pretest and posttest consisted of 10 questions which were pilot tested with two education interns at WCK. Using Guttman split-half reliability analysis, the pretest had a reliability coefficient of 0.69, which is appropriate for a test of this length used for research purposes (Ary et al. 1996).

For the one-week workshops, participants completed the pretest and posttest through semi-structured interviews with the facilitator. The purpose of using interviews was to allow probing questions and in-depth analysis of pre and post-training knowledge and attitudes. For the one-day workshops, participants responded to the same 10

questions using a written survey due to time constraints. All 120 participants completed the pretest prior to the workshop and the posttest immediately following the training.

A paired t-test (SPSS 1997) was conducted to analyze differences in pretest and posttest scores to evaluate the effectiveness of the trainings. Analysis of variance (ANOVA) also was conducted with post-hoc comparisons using the Least Significant Difference (LSD) test (SPSS 1997). Normal theory techniques, rather than nonparametric techniques were used for this study for the desirable properties of their post-hoc tests. Significant differences are reported at the $p \leq 0.05$ level. A factor analysis using a varimax rotation (SPSS 1997) was applied to the posttest scores to identify key content areas measured by the instrument. Varimax rotation was chosen so that each question would be related to exactly one factor, and those factors would be independent of each other.

Institutionalization of Participatory Evaluation for Organizational Learning at WCK

Specific methods were used to promote the institutionalization of participatory evaluation at WCK. These methods were designed to foster organizational learning as an outcome of the participatory evaluation process, apply evaluation skills beyond the training workshops, and promote the use of evaluation results.

The first strategy included implementation of the WCK Incentive Program, the monitoring and evaluation system for the organization. Implementation of the incentive program demanded capacity-building for staff in requisite skills such as information management. To support the incentive program, participants in the trainings developed action plans for implementing the program, as well as a force field analysis. Force field analysis is a technique for identifying factors promoting and inhibiting change within an

organization or system (Tessmer 1993). The second strategy for institutionalization of evaluation involved evaluation of specific environmental education projects by individual staff members or teams.

Results

Needs Assessment

The interviews with education staff revealed that staff assessed the effectiveness of their programs using factors such as the number of participants attending WCK events, rather than through systematic program evaluation. Document review and participant observation reflected that program implementation and the need for funding received much higher priority than monitoring and evaluation. Staff submitted annual project reports to donors, and all staff and action groups reported to headquarters at bi-annual meetings. In addition, education staff met every two weeks to report and discuss their progress and setbacks. From the perspective of WCK staff, the only formal project "evaluations" consisted of brief site visits by donors for the purposes of accountability.

As one staff member noted, "We haven't ventured into evaluation at WCK, so we don't really know if we're making an impact. We're just doing activities without really measuring if our message is communicated. Instead, we judge our success by the number of students participating in an activity."

All 10 staff members interviewed felt they would need additional training before they would be able to design and implement a systematic evaluation. Evaluation was seen as a responsibility typically delegated to external consultants, primarily donors. These perceptions of conventional evaluations had left many with a negative impression of evaluations.

Some staff described such evaluations as a process of "investigation," rather than program improvement. "The donors come to evaluate, and it's a process of checking, inspection, and investigation," said James Maina. "They leave and we await the results like an examination. When they send us the report after a few months, we flip through it quickly to see what they thought about us."

Other staff described the suspicion that evaluations tend to bring, especially if driven by donor criteria. "People don't even like those words . . . monitoring and evaluation because they think, am I under suspicion?" Jane Nguti said. "Is it for punishment? The first impression of evaluation is always negative. Because once you hear monitoring and evaluation, you know it's the end. Whether you've been doing a good job or not."

The drawings by staff further revealed prior conceptions of evaluation, as seen in Figure 4-3. The drawings showed supervisors admonishing staff; dollar signs for accountability; question marks; and superiors investigating inferiors. The majority of drawings reflected this perception of evaluation conducted by outsiders or supervisors.

The ranking exercise was completed by all 10 education staff, who were asked to rank the tasks in order of the time spent on each responsibility in their job. A higher rank revealed a task of greater importance in terms of time expended. The tasks with the highest mean rank were coordinating logistics (7.8) and implementing program (7.2), as seen in Table 4-5. The lowest rankings were received by pilot testing the program (0.9) and evaluating impacts of program (0.6).

When asked to record words associated with the term evaluation, the 10 education staff noted the following terms: test, examination, review, pass or fail; questions and

questionnaires; standards, achievement of goals; inspecting, faultfinding, judging; checking, checks and balances; intimidation, no smiling faces; and finished product. The words associated with evaluation reflected concepts such as testing and exams, inspection, standards, and completed products. These words tended to express negative connotations such as intimidation and faultfinding.

Discussions with staff also showed that traditional tools such as log frame analysis (UNDP 1997) and detailed planning matrices were viewed with skepticism. "I once went to a conference where they told us to place our activities for WCK in boxes and connect multiple boxes with arrows," said one staff member. "The whole process was supposed to help us with planning. By the end of the day, we had an entire flip chart filled with boxes and arrows, but we didn't have a clear planning process. Here at WCK, we need something simple to help us with planning and monitoring, not these complex tools."

The results from the needs assessment were used to structure a plan for building the capacity of WCK staff and teachers to conduct evaluation. The majority of staff expressed an interest in training, and thus the training of trainers approach was selected. In addition, the staff wanted training to incorporate practical experience in designing and implementing program evaluation. The administration also noted concern that evaluation would end after completion of the training program. Thus, a component of the workshops was development of a basic monitoring and evaluation system, the incentive program, which would be implemented after the trainings.

Capacity-Building in Participatory Evaluation

The trainings were designed to demystify evaluation during the initial sessions and to address the prior conception of evaluation as a complex activity conducted by

outsiders. The workshop program then introduced evaluation design, data collection tools, analysis, and application of evaluation to an environmental education program, either through fieldwork or case studies. The last day of the workshop focused on the design of a monitoring and evaluation system for WCK. (Additional outcomes from the training sessions are included in Appendix B).

Table 4-6 presents an outline of activities and content for the one-week workshops. The one-day workshops followed similar content in presentation, but with less detail and with case studies instead of fieldwork due to time constraints.

Demystifying evaluation: the role of evaluation in everyday life

The trainings used role plays and examples such as cooking and farming to demonstrate how participants conduct evaluation in their everyday life. Through role plays of farming, the participants identified three key evaluation concepts: evaluation questions, sources of evidence, and indicators (Table 4-7). Participants could easily identify these concepts in the context of everyday scenarios. These three concepts would form the framework for an evaluation design called the evaluation matrix. The evaluation matrix would then be applied to environmental education programs and to the monitoring and evaluation system at WCK.

Rationale for evaluation

In all seven trainings, the participants worked in small groups to assess the importance of evaluation and the consequences for WCK of failing to evaluate programs. This initial step was critical to ensure that the decision to build the organizational capacity for participatory evaluation stemmed from the participants themselves, rather than from headquarters or the facilitators. The results from all seven trainings show that participants

felt the primary reasons to conduct evaluation were to assess achievement of objectives, discover weaknesses and improve them, and determine success and failure of projects. The main consequences of failing to evaluate conservation programs identified in all seven trainings were that organizations cannot tell if objectives were met and cannot identify failures and correct them.

Current methods of evaluation and proposed changes for WCK

An essential element of capacity-building in evaluation was providing the opportunity for workshop participants to assess their current methods of evaluation, as well as desired changes in monitoring and evaluation at WCK. As seen in Table 4-8, primary methods for evaluation included the number of participants in activities (100%, n=7) and the number of activities completed (86%, n=6). Regarding desired changes, 71% (n=5) of the seven workshops proposed standardizing the methods for evaluation within WCK, while 57% (n=4) noted the need to provide incentives for evaluations.

Participatory evaluation versus conventional evaluation

As an introduction to participatory evaluation, the teachers, staff and community members conducted stakeholder analyses to identify the primary stakeholders of the Wildlife Clubs of Kenya and their potential involvement in program evaluation. Key stakeholders of WCK included students, teachers, staff, as well as donors, government officials, and conservation organizations.

Using role plays, the workshop participants explored differences between conventional evaluation and participatory evaluation. The teachers identified conventional evaluation with teaching assessments conducted by the Ministry of Education, while the WCK staff related to donor evaluations as their experience with conventional evaluation.

The primary differences noted by participants were that donors or outsiders conduct conventional evaluation, rather than project stakeholders, and that conventional evaluations are conducted for the purposes of accountability, rather than program improvement. In addition, they noted that conventional evaluation focuses more on end-products, while participatory evaluation evaluates both processes, as well as products.

Application of evaluation matrix to conservation education projects

The workshop sessions introduced tools for collecting data in an evaluation, including: participatory mapping, songs and art; surveys; observation, interviews; and record-keeping. After an introduction to each tool, the participants designed data collection tools either for evaluating the WCK Ecology program or for case studies specific to their region. The participants worked in teams, and each team developed an evaluation matrix to guide their evaluation design.

The evaluation matrix was applied to the context of environmental education programs (Table 4-9). As seen in the evaluation matrix, the participants identified evaluation questions, sources of evidence, and indicators for three phases of program activity: the planning, process, and product stage (Jacobson 1991). This framework for evaluation was developed specifically for this study.

During the fieldwork, students from a local secondary school participated in the WCK Ecology program. Staff and teachers collected data using tools such as interview guides, surveys, and mapping exercises. The workshop participants then analyzed their data and prepared presentations of results, recommendations, and lessons learned. For the one day workshops, the participants analyzed data from a case study that used their data collection tools and also presented their results.

An important component of capacity building included strategies for presentation and use of evaluation results. Before presenting their own evaluation results, participants prepared role plays of presentations to different stakeholder groups, such as donors and local community members. For the donor presentations, the role plays involved formal reports, an executive summary, and briefing of results in English. The role plays directed toward community members included a community meeting with visual pictures conducted in Kiswahili. The objective of this exercise was for participants to gain skills in presenting results to different stakeholder groups, and thus increase the potential of the use of the results by the target audience.

Application of the evaluation matrix to WCK: Designing the WCK incentive program

An integral aspect of the trainings was to translate skills gained through fieldwork and case studies to the development of a participatory monitoring and evaluation system for WCK. The WCK Incentive Program provided this structure, and gave the workshop participants the opportunity to identify indicators and sources of evidence for the evaluation system. In addition, the incentive program would serve to award the best clubs in each region, best action group, and best regional office in the country. Prizes for the competition would include trips to the national parks, vouchers for wildlife books, and parties for staff. The indicators would be the criteria for judging this competition. More importantly, however, the indicators would provide baseline data for monitoring the effectiveness of WCK activities over time.

The objectives of the WCK Incentive Program were to:

- build a framework for monitoring and evaluation of WCK activities

- enhance the capacity of WCK staff to document activities and outputs
- increase motivation for clubs, action groups, and regional offices to achieve their objectives
- reward performance toward conservation

Participants were involved in the development of indicators and sources of evidence for the incentive program. Indicators that were common to the majority of workshops, and met the needs of administration, were used in the design of the overall evaluation system at WCK.

The following evaluation matrix (Table 4-10) provides examples of indicators and sources of evidence that resulted from workshop sessions at three levels: club, action groups, and regional office. Percentages indicate the percent of workshops identifying each indicator. Note that for the regional office level, only the staff and action group workshops participated in identification of these indicators. For the action group level, the Western region workshop did not include action group members, so these participants did not brainstorm indicators for that level.

After consolidating indicators from the seven workshops, the education staff identified four key indicators that would provide a simple baseline for monitoring WCK activities over time. The indicators would also serve as criteria for judging the incentive program. These four indicators included: (1) number of registered clubs; (2) variety and frequency of WCK activities; (3) action taken to address environmental issues; and (4) positive feedback/support from stakeholders.

Gains in Attitudes and Knowledge Regarding Evaluation

Quantitative results

The results from a paired t-test reveal significant differences in pretest and posttest scores for the 120 participants in the trainings ($t = 31.24$, $p < 0.0001$). The pretest mean was 17.70, with a posttest mean of 39.33, from a total possible points of 50.

Significant differences existed in pretest scores among training groups as revealed by analysis of variance and post-hoc comparisons (Table 4-11). Significant differences in pretest scores also existed between the staff and the secondary school teachers, primary school teachers, and community members (Table 4-12).

Analysis of variance was conducted for score gains (posttest-pretest) among the seven training groups with no significant differences among the groups (Table 4-13). Analysis of variance also was conducted for differences in score gains among positions of participants (staff, secondary school teacher, primary school teacher, and community members). There were no significant differences among groups for score gains (Table 4-14).

Factor analysis using a varimax rotation (SPSS 1997) was applied to the posttest scores. Using the criterion of retaining factors with eigenvalues greater than 1, four factors were identified (Table 4-15). These factors explained 58% of the variation in the data.

Factor 1 includes questions 6, 7, 8 which relate to participatory evaluation and indicators. Factor 2 includes questions 5 and 10 related to data collection tools and format for presenting results. Factor 3 reflects the rationale for evaluation with questions

1 and 2. And factor 4 (questions 3, 4, 9) measures knowledge of the key players in evaluation (who is involved, what are their questions, and the format for results).

Means and standard deviations for pretest questions, posttest questions, and score gains per question are reported in Table 4-16. The number of participants with a score gain > 0 for each question is presented in Table 4-17.

Qualitative results

Qualitative evidence collected during the pre-training and post-training interviews also reveals changes in attitude and knowledge regarding evaluation. As Patrick Njagi noted, "Initially, I didn't look at evaluation as a very important tool in my work. But now, I realize that it can improve my work. We may have been evaluating programs informally in the past, but we didn't know we were doing it."

Other staff echoed the initial feeling that evaluation was not a critical component of their job. "I did have the thought at the beginning that the workshop on evaluation would be a waste of time for me," said Mary Mbugua. "But it was very practical. It's excellent because you can use evaluation for marketing purposes as well as answering your own evaluation questions."

Demystifying evaluation was an important change resulting from the workshop, according to staff. As James Maina said, "The biggest gain from the trainings was demystifying evaluation for WCK staff. Evaluation went from being something done by outside consultants to something they could do. It has always been difficult getting people to do monitoring and evaluation since it's usually done by donors. Climbing that hill was a big achievement."

Viewing evaluation as a process involving stakeholders, rather than only donors, was a change noted by other staff as well. "I found that you can involve many people in evaluation," said Jane Nguti. "Evaluation doesn't have to be shrouded in mystery anymore, since everything is transparent, and everyone is accountable."

Likewise, an education officer noted how involving teachers in evaluation in his region would increase the use of participatory evaluation. "I'm working with teachers to develop evaluation tools," said Salim Ali. "By involving them, the teachers feel that WCK is conscious of their existence. It will give them more morale, recognition, and motivation to work harder. It's different from just sitting them down and saying 'Okay, this is what we are going to do, because now they are involved in actually designing the evaluation.'"

An additional attitude change was the perception of evaluation as a process beginning in the planning stages of a program. According to Alice Makio, "Initially, I thought evaluation was only done after a project ends, but I learned that evaluation is a continuous process."

Many participants in the workshops used vocabulary familiar to their teaching professions to describe evaluation after the trainings. "Just as students are tested, we must test ourselves," said teacher John Mulesi. Another teacher used similar vocabulary to describe his own rationale for evaluation: "If you don't evaluate your programs, it's like a teacher teaching and never giving a test," he said.

Institutionalization of Participatory Evaluation: Organizational Learning at WCK

Action plans and force field analysis

To promote application of skills gained during the trainings, all participants worked with their regional partners to develop action plans for implementing evaluation of

WCK activities through the WCK Incentive Program. The incentive program is the monitoring and evaluation system developed as a result of these trainings. The clubs, action groups, and regional offices are responsible for collecting information on the indicators through the identified sources of evidence. The action plans addressed the following questions:

(1) When will you meet to disseminate and plan for incentive program?

(2) How will you document information on the different indicators?

(3) Who will be involved in collecting information?

(4) What WCK programs and activities will you evaluate?

(5) How will you assess impacts of your WCK activities?

(6) What format will you present the results to headquarters for greatest impact?

(7) What problems or constraints will you face?

(8) What helping forces or opportunities exist?

Identification of opportunities and constraints to institutionalization of evaluation was a critical step toward developing a plan for applying the knowledge and skills gained after the trainings. The participants in the staff and action group trainings conducted a force field analysis (Tessmer 1993) to identify helping forces and constraints to organizational change in implementing a monitoring and evaluation system (Figure 4-4).

Capacity-building in information management

Institutionalization of participatory evaluation at WCK required capacity-building after the trainings in the requisite skills of information management. One indicator

identified by participants during the workshops was the number of wildlife clubs registered in each region per year. In order to monitor this indicator efficiently, it became necessary to enhance the capacity of support staff such as the membership clerk to manage the data.

Prior to the workshop, the membership clerk had maintained the records of registered clubs by hand. The records of the more than 2,500 clubs that have been WCK members since 1968 were organized alphabetically in files by club name. Compilation of registered clubs in a region by year required at least one week.

Thus, the design of a participatory evaluation system prompted identification of needs within the organization for enhanced information management. Given this reality, the membership data were computerized, and support staff and education staff were trained in the use of spreadsheets and applications such as ClarisWorks database. Entry of this data allowed analysis of trends in WCK membership, as well as efficient access to the number of clubs in each region. After entry of all registered clubs since 1968, for example, the WCK staff could analyze patterns in membership by region during the past 30 years (Figure 4-5).

Building on existing institutional structures through the WCK incentive program

Following the trainings, dissemination of the WCK incentive program became a priority for the organization. Education staff sent posters, flyers, and articles in the WCK *Komba* magazine to all registered wildlife clubs to promote the incentive program. Rather than advertising the incentive program as a monitoring and evaluation system, the public relations materials described the program as a WCK annual competition, building on past institutional structures and vocabulary familiar to the clubs.

At the regional level, education officers such as in Western region developed a filing system for maintaining information on each club in their region. The information solicited from the clubs would then by summarized and submitted for entry in the WCK incentive program. The filing system was the first time that a systematic data collection process had been instigated to maintain active information on each registered club in that region.

Applying evaluation to specific WCK programs

WCK education officers and action group officials had designed data collection tools for evaluation during the trainings. After the workshops, they applied these and other tools to the monitoring and evaluation of specific WCK programs in their regions.

The education officer for the Nairobi region extended the evaluation of the WCK Ecology program begun during the fieldwork. She designed a pretest and posttest to measure attitudes and knowledge gains as a result of the Ecology program and collected data from 165 primary school students and 86 secondary school students participating in the program (Appendix B).

In the Nairobi region, the action group officials and education officer also modified a scoresheet designed during the trainings to quantify the quality of student drama and music presentations during annual WCK conservation rally. They analyzed the data from the rally to reflect student knowledge regarding specific conservation issues, such as community participation in conservation and urban pollution (Appendix A). Similarly, other action groups such as the Meru action group used a scoresheet developed during training to collect baseline data on the presentations at their annual regional rally.

In the Western region, the education officer and action group officials designed surveys to evaluate the effectiveness and participant feedback from activities such as a workshop on conservation of the Kakamega Forest. The Coast regional education officer worked with action group officials to design a survey to measure student attitudes during the design and implementation of a WCK Marine Ecology program. Currently, these WCK staff and teachers are collecting data from these evaluation tools.

Discussion

Needs Assessment as a Foundation for Capacity-Building in Evaluation

Despite its 30-year history, WCK had no history of systematic evaluation. Thus, capacity-building in monitoring and evaluation was a need identified by staff. Before designing a training program, however, it was essential to document prior conceptions of evaluation and address these conceptions through training. In this study, tools such as drawings, interviews, and word associations tapped into these prior perceptions of evaluation as a complex process conducted by outsiders for the purposes of accountability.

Given this prior knowledge, the trainings first addressed the role of evaluation in everyday life in order to demystify evaluation. By applying the evaluation matrix to everyday life, it became easier to identify concepts of evaluation questions, sources of evidence, and indicators in WCK projects. The results from this study highlight the importance of integrating prior conceptions into capacity-building.

In addition, the trainings allowed the staff, teachers, and community members to conduct their own needs assessment of evaluation at WCK. Rather than imposing this needed change on the organization, the trainings gave participants the opportunity to

address questions such as: Why evaluate? What happens if we don't evaluate? They also assessed current methods of evaluation at WCK and proposed changes in evaluation of WCK activities.

Too often, these discussions occur only at the national headquarters of organizations, rather than incorporating input from multiple levels: national, regional, and local. Limiting such a needs assessment to the national level misses valuable information from the grassroots. For example, when assessing proposed changes in evaluation at WCK, the results from all five of the local trainings reflected the need for incentives for evaluation and for active clubs. This need was not identified by staff at the national level. However, the results from all seven trainings revealed the need for standardization of evaluation practices. Thus, conducting needs assessment at multiple scales reveals both similarities and differences in perspectives within the organization.

Integrating Input from Multiple Levels of an Organization into a M&E System

In the design of the incentive program, identification of indicators also occurred at multiple levels of the organization. By documenting indicators at national, regional, and local trainings, the incentive program could reflect these different institutional levels. Negotiation of indicators from multiple levels of an organization thus becomes an important step in the design of a participatory evaluation system.

Negotiating differences in indicators is often cited as one of the most crucial issues in participatory monitoring and evaluation (Guijt & Sidersky 1996; Mulwa 1994; PAMFORK 1997). The literature review conducted in this study revealed the need for negotiation of indicators as a key recommendation for participatory evaluation. This issue can become contentious when organizational levels represent competing interests such as

donors, national government, and grassroots community members. In WCK, negotiation of indicators often occurred during workshop sessions, as participants debated the relevance of specific indicators to the incentive program.

The workshop results revealed common indicators and data collection tools from all seven workshops that could be used for baseline monitoring and evaluation. The incentive program met the needs for providing incentives for evaluation and active clubs, as well as for standardization of evaluation practices at WCK.

Gains in Attitudes and Knowledge Regarding Evaluation

Both the quantitative pretest and posttest scores and the qualitative interview data support changes in attitudes and knowledge regarding evaluation as a result of the trainings. The pretest scores showed significant differences in prior knowledge of evaluation at different organizational levels. Differences existed in pretest scores between staff and four of the local teacher training groups, as well as between the action group members and two of the teacher training groups. There were also significant pretest differences between the staff and the secondary school teachers, primary school teachers, and community members.

However, when score *gains* (posttest-pretest) were analyzed, there were no significant differences in score gains among the staff, secondary school teachers, primary school teachers, and community members. It would suggest that all four stakeholder groups were capable of gaining knowledge and competency in evaluation, despite differences in prior knowledge in evaluation.

Regarding specific components of the test, the results reveal that the majority of participants showed score gains on 9 of the 10 questions. Eighty percent or greater of

participants showed gains on five of the 10 questions. These five questions represent participatory evaluation and indicators (factor 1) and tools for data collection and presentation (factor 2).

However only 29% of participants showed gains on identifying evaluation questions (pretest mean = 2.66, posttest mean = 3.64). Further analysis of responses to this question reveals that many participants still confused survey questions with overall evaluation questions. As Jane Nguti noted, "Some people come away thinking just about the data collection tools like surveys and not about the procedure of having evaluation questions, sources of evidence, and indicators," she said. "That's the danger of presenting evaluation tools." Given this finding, the marketing materials for the WCK Incentive Program emphasized the importance of using data collection tools as a method to address *broad* evaluation questions, such as "How effective is our program?"

Institutionalization of Participatory Evaluation: Organizational Learning at WCK

To institutionalize participatory evaluation at WCK, capacity building in information management became a critical step. Without the ability to manage data in the organization, WCK could not be expected to collect, summarize, analyze, and use monitoring and evaluation results.

In addition to addressing requisite skills in information management, incorporating participatory evaluation into the organizational framework at WCK required building on existing institutional structures and vocabulary. Rather than introducing evaluation as a new tool to replace former practices, this study identified existing institutional structures that could be adapted to support monitoring and evaluation.

The design of a WCK monitoring and evaluation system through the Incentive Program built on the existing practice of competitions within WCK. Since the 1960s, student members of WCK have participated in art, drama, and essay competitions. The competition for best club, action group, and regional office through the WCK Incentive Program adapted a "competition" to fit the needs of monitoring and evaluation. This strategy promotes learning and adoption of the new practice of evaluation within the organization. Other projects such as the Nepal-UK Community Forestry Project which works with 1500 Forest User Groups have used the strategy of competitions to promote monitoring and evaluation (Rai 1998).

This study also used existing vocabulary as a strategy to support organizational learning about participatory evaluation. In evaluating specific WCK projects, for example, staff designed pretests and posttests to measure knowledge gained by students as a result of exposure to WCK Ecology programs. Rather than discussing "analysis of the evaluation data," they referred to "grading the tests." Thus, evaluation fit into their cognitive framework, and they could discuss evaluation with the vocabulary typically used by teachers and education staff.

Other practitioners have noted the importance of using local vocabulary within an organization when initiating participatory evaluation (Abbot & Guijt 1998; Symes & Jasser 1998; Larson and Svendsen 1996). Abbot and Guijt (1998) discuss their work with participatory monitoring with local farmers on sustainable agriculture projects in Brazil where the word "monitoring" was not used since the term was viewed as foreign and academic to the farmers. The WCK trainings with community members and teachers at

the local level used the term "signs" for indicators at the beginning of the workshops, as this term had greater significance at the local level.

Each conservation organization has a culture of existing knowledge and practices. The integration of participatory evaluation into WCK "institutions" of competitions and the use of existing vocabulary promoted the process of capacity building in evaluation at both an individual and organizational level (Figure 4-6).

This finding reflects two concepts first advanced by educational theorist Jean Piaget: assimilation and accommodation (Ormrod 1990). Piaget maintained that individuals hold cognitive structures, or mental models of concepts. For effective learning, new concepts should be related or linked to existing knowledge. A learner first "assimilates" the new concept into an existing cognitive structure. Assimilation is a process by which an individual interacts with an object or event in a way that is consistent with an existing mental model.

The individual then must "accommodate" the former cognitive structure to fit the characteristics of the new concept. Accommodation is the process by which an individual modifies an existing mental model to account for a new event. Individual learning results from these joint processes of assimilation and accommodation (Ormrod 1990).

These educational theories describe individual learning but relate to organizational learning as well. Organizational learning "occurs when members of an organization act as learning agents for the organization . . . embedding the results of their inquiry into private images and shared maps of the organization" (Argyis & Schon 1978). In his discussion of organizational learning, Senge (1995) discusses the importance of "mental models" of concepts held at both an individual and institutional level.

The literature supports the role of participatory evaluation in promoting learning within an organization (Bekalo 1997; Cousins and Earl 1995; PACT 1996). As Argyis and Schon (1978) note, "organizational learning is not merely individual learning, yet organizations learn only through the experiences and actions of individuals" (p. 9).

The critical factor in organizational learning is that the institution must document the lessons from individual or team learning and make the information accessible to the entire organization. Individuals may leave an organization, but documentation of their learning means that the institution continues to adapt and learn.

Organizational learning has been identified as an important element of success for natural resource management and conservation organizations (Gunderson et al. 1995; Lee 1993). At WCK, participatory evaluation led to organizational learning about information management; documenting impacts and effectiveness; identifying indicators; decision-making based on concrete results; and incorporating multiple inputs into the design of an evaluation system.

Literature reviews conducted by Estrella and Gaventa (1998) as well as Armonia and Campilan (1997) reflect the following issues that should be addressed in future implementation of participatory evaluation:

- understanding participatory monitoring and evaluation (PM&E) as a social process, including the role of conflict and conflict resolution, and the role of power
- methodological issues, such as choosing indicators, developing standards of rigor and objectivity, the role of the facilitator, and choice of tools
- institutionalization and sustainability of PM&E

- the need for more documentation of PM&E
- participants in PM&E, identifying who participates and the role of the donor and decision maker

This study highlighted the above issues of institutionalization of participatory evaluation, selection of indicators and tools, and the role of participants in participatory evaluation. By future implementation of participatory evaluation, the conservation community can address these emerging issues, while promoting the success of conservation programs through evaluation.

The Future of Participatory Evaluation for Conservation Organizations

This study addressed a fundamental question: How does a grassroots conservation organization with no history of systematic program evaluation adopt such a process into programming? The answer is through capacity-building and institutionalization of participatory evaluation. Grassroots conservation organizations must struggle for the limited financial and human resources necessary for their survival. For the conservation community, such institutions represent vital links between international and national environmental policy and concrete implementation at the local level.

However these organizations cannot continue to operate without concrete skills to document impacts and collect systematic data to guide program improvement. Participatory evaluation represents an innovative approach to integrating local participation into the monitoring and evaluation processes. Fields such as community development, sustainable agriculture, and health have made great strides in capacity-building in participatory evaluation, as evidenced by the recent growth of participatory evaluation in the literature.

Unfortunately, the field of natural resource management and conservation has not followed this trend. We continue to emphasize local participation in project planning, but rely on external consultants for evaluation. The time is ripe for the conservation community to experiment with participatory evaluation and document both failures and successes in the process.

Capacity-building in participatory evaluation does not guarantee institutionalization of the process. Donor demands for products may impede the ability of small organizations to implement participatory evaluation. Thus, education also should focus on the donor community in order to increase awareness and knowledge of the need for participatory evaluation at the project level.

Without the addition of human resources for small organizations, participatory evaluation results in additional work for already overburdened staff. In the long term, participatory evaluation makes a job easier, but the process requires commitment to the process and incentives for the short-term. Cohesion and communication within an organization are keys to effective participatory evaluation to ensure exchange of ideas about the purpose of evaluation, and to continue the process of organizational learning.

Institutionalization of participatory evaluation is not an overnight process. It takes time. Long-term studies of projects practicing participatory evaluation are important to extend our learning within the conservation community. Without such studies, the shelf-life of our knowledge of participatory evaluation may expire on the date that short-term studies end.

By including local stakeholders in the design, implementation, and use of evaluation results, we make local participation an integral component of the entire project

cycle, rather than the buzzword necessary to jump start a project. Participatory evaluation represents the final link in true sustainability, as grassroots conservation organizations document their own failures and successes. Only through such initiatives can we build our capacity to evaluate progress, improve programs, and increase the chances of success for protecting the biodiversity of the future.

Table 4-1. Differences between conventional and participatory evaluation

Issue	Conventional	Participatory
• Epistemology	objectivist world view knowledge as empirical	constructivist world view knowledge as dialectical, constructed
• Involvement of stakeholders	passive	interactive
• Choice of problem	based on client's/donor's needs	based on immediate problem situation
• Methodology	quantitative or qualitative	qualitative and/or quantitative
• Research design	fixed	flexible
• Assessment	fewer measures/standardized	multiple measures/site specific
• Role of evaluator	technician	facilitator
• Locus of control	external (evaluator)	internal (stakeholders)
• Interests served	administrators/donors	all stakeholder groups

Table 4-2 Matrix of participatory evaluation studies

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Fernandez, 1991	Agriculture	Monitoring and evaluation of Project for the Validation of Technology for Highland Communities in Peru	Interdisciplinary team of project researchers, such as agriculturists and social scientists	Farming communities and households	Participate in community discussions and meetings and data collection methods to assess production	PM&E required high level of flexibility on part of researchers, in order to adapt research methods of assessment to the local realities of farmers
Nagel et al., 1992	Agriculture	Monitoring and evaluation of the Siavonga Agricultural Development Project (SADP) in Zambia	Project field extensionists to coordinate M&E	Village extension groups, local farmers	Collect data through recording sheets and booklets, work diaries, ranking exercises	PM&E designed for purposes of improving project management and comparing planned and actual achievements to provide direction for future improvements.
Lightfoot et al., 1993	Agriculture	Managing and monitoring sustainable farming systems in the Philippines	Facilitators coordinate monitoring and establish initial indicators	Local farmers and households	Use natural resources maps, transects, resource flow diagrams to monitor inputs, labor, produce and by-products	Selection and definition of indicators for sustainable farming difficult and indicators need to be improved
Roche, 1993	Agriculture	Evaluation of ACORD agriculture projects for crop regeneration with agro-pastoralists in Mali	ACORD (an NGO) project staff; (After 3 years, evaluation will also involve external evaluators and state development committees.)	Local agro-pastoralists and other community members	Participate in village meetings and workshop to identify and track indicators	Different stakeholders, such as men and women, identified different indicators of success.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Choudhary & Tandon, 1995	Agriculture	Evaluation of Charity Bengal, a voluntary agency working in West Bengal on agriculture and irrigation	Initiate and facilitate evaluation process (request came from donors); key evaluation team consisted of a social scientist, an ex-staff member; and a representative of the resource agency.	25 members from Charity Bengal staff	Formulate objectives of evaluation and priority areas for field visits; provide statistics from document review; implement evaluation; discuss findings	Building working relationship among evaluation team took time; due to hierarchy within CB, necessary to elicit feedback from different categories of staff in separate forums.
Defoer, 1995 (as cited in Abbot & Guijt, 1998)	Agriculture	Monitoring of soil fertility management in southern Mali	Researchers coordinate monitoring efforts	Local farmers	Participate in collecting data, analyzing the diversity in soil management practices, using resource flow diagrams, mapping resources, and defining criteria	The need exists to enhance participatory methods to allow statistical analysis and quantification to maintain interest of researchers without sacrificing farmer participation.
Kiwara, 1995b	Agriculture	Evaluation of the Uvikiuta Youth Agriculture Production Improvement Project, Tanzania	Coordinator of evaluation	The management committee of the project	Prioritize evaluation topics; develop questionnaires; analyze results; compile final report	Important to brainstorm evaluation topics among team members and then prioritize topics to team's approval

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Thompson & Pretty, 1995	Agriculture	Participatory impact assessment of a soil and water conservation program supported by government of Kenya	Government ministry officers and program staff to facilitate assessment	Local farmers	Use PRA tools such as public meetings, transect walks, wealth ranking to assess linkages between project implementation and impacts on soil and water conservation in communities.	Implementation rates for soil and water conservation were greater when participation in planning and implementation was interactive between government extentionists and local people, and were less when participation was consultative.
Guijt & Sidersky, 1996	Agriculture	Monitoring of sustainable agriculture projects with AS-PTA, a Brazilian NGO working with farmers, associations, and rural trade unions	Facilitators from the NGO, AS-PTA coordinate monitoring	Farmers and representatives from associations and rural trade unions	Define objectives of partnerships with NGO; identify indicators and data collection methods; monitor indicators;	Essential to spend sufficient time on objectives in order to identify relevant indicators; different stakeholders may want to monitor different indicators, which requires negotiation.
Blauert & Quintanar, 1997	Agriculture	Evaluation of farmer-to-farmer program called CETAMEX in Mexico	Project staff to coordinate stakeholder evaluation	Farmers, extensionists, villagers, donors	Develop indicators, use PRA tools for eliciting own criteria used for quantitative and qualitative evaluation; collect and analyze data on indicators; make recommendations	The search for indicators from different stakeholder groups often tells us just as much about the perceptions of stakeholders as the actual project impact

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Camplin, 1997	Agriculture	Monitoring and evaluation of UPWARD projects in sustainable agriculture in Philippines, Indonesia, & Nepal	Research and development professionals coordinate evaluation	Farmers, project staff,	Engage in field monitoring of sustainable agriculture projects	Assessment criteria often preset by project researchers, but need for R&D professionals to explore users' perspectives in order to enhance local capacity for field monitoring.
Dutta & Khan, 1997	Agriculture	Monitoring and evaluation of agriculture and natural resource sector projects by CARE Bangladesh	Core Quest Team (Qualitative and Quantitative Evaluation Strengthening Team) of staff members	Farmers	With Quest Team, articulate baseline, set goals, prepare plan, and monitor and evaluate indicators using both quantitative and qualitative data.	PM&E outputs also satisfy project logframe requirements; negotiation process necessary to reconcile staff and farmers perceptions regarding appropriate indicators and methods of measurement
Lawrence et al., 1997	Agriculture	Monitoring farming systems change in farmer-managed trials in Bolivia and Laos	Researchers and field staff coordinate farmer involvement	Farmers	Identify and rank indicators through PRA methods (resource flow diagrams) and score change on specific indicators to monitor projects	Importance of using farmer-developed indicators as basis for PM&E system
Mangan, 1997	Agriculture	Monitoring integrated insect management in fields in southeast Asia	Facilitators train farmers in insect analysis	Local farmers	Conduct transect walks, observation of crops and drawing of plants and insects in fields; analysis and dissemination of data	Participatory insect analysis allows farmers to build skills in analysis, identification, assessment. These skills lead to informed decisions by farmers regarding application of pesticides on their land.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Mukhwana, 1997	Agriculture	Monitoring and evaluation of a sustainable agriculture development program in Kenya	Project team leader from The Sustainable Agriculture Center for Research and Development in Africa (SACRED-AFRICA)	Farmers in collaboration with government of Kenya officials, Kenya Agricultural Research Institute, Moi University, and local NGOs and churches	Planning schedule for M&E; identifying indicators; collecting data and analysis; identifying methods of dissemination	Collaborating partners such as government officials used to operating in top-down system, despite training in PRA. Community members fear that challenging the system might endanger handouts from politicians in future.
Ocampo, 1997	Agriculture	Monitoring and evaluation of the Cuchumatanes Rural Development Project in the highlands of Guatemala	Monitoring and evaluation unit (MEU) of project coordinates data collection and analysis	Field promoters, extensionists, coordinators, MEU, community members	Field promoters record data on indicators, which is compiled by extensionists who also record their activities. Coordinators enter monthly information. MEU collects disks of all information, analyzes, and reports. Community members participate in focus groups & evaluation workshops.	Participation of beneficiaries of project is not necessarily a requirement in each and every M&E activity.
Symes & Jasser, 1998	Agriculture	Monitoring and evaluation of projects by the Palestinian Agricultural Relief Committees (PARC), a Palestinian NGO	Member from PARC Consultancy Unit facilitates the evaluation team	Evaluation team consists of field staff, community members, and PARC consultancy unit representative	Evaluation team integrates participatory planning, monitoring, and evaluation of projects. Uses process to integrate community needs into the project cycle.	Participatory monitoring and evaluation cannot be separated from planning. Must integrate all phases into the project cycle to establish a learning process.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Whitmore, 1998	Agriculture	Evaluation of a Mexican Farmers' Cooperative in the Sinombre Valley, Mexico	External evaluator and Mexican facilitator	Members of the cooperative	Participate in community meetings to assess the effectiveness of the cooperative	A participatory evaluation approach does not work with an organization that is not participatory. Attempts to establish a community evaluation team failed due to divisive power relations within organization.
Kotz, 1981	Community development	Evaluation of the use of community development money by city governments in U.S.	Citizen groups serve as primary evaluators	Neighborhood groups trained in 43 cities	Monitor the use of Community Development Block Grants in their cities	Citizen evaluations revealed findings that some cities had excluded poorer neighborhoods from block grants, resulting in action to retarget the benefits. In contrast, expensive government-funded evaluations of same projects were mired in bureaucratic controversy.
Farrar & House, 1983	Community development	Review of evaluation of the PUSH/Excel program for inner city youth in U.S.	Derive evaluation agenda	External evaluators	Involve stakeholders as information users	Suffered from incomplete implementation of participatory approaches, as well as program that was not institutionalized
Murray, 1983	Community development	Review of evaluation of the Cities-in-Schools program in U.S. with inner city youth	Derive evaluation agenda	External evaluators	Involve stakeholders as information users in evaluation	Participatory approach to evaluation was not implemented completely; need for complete implementation of participatory approach.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Greene, 1987a	Community development	Evaluation of city youth bureau and county day care council in U.S.	Technician, facilitator, participant, and advocate for utilization of results	One small evaluation team with four representative stakeholders, and larger stakeholder groups	Guide evaluation (small group); provide feedback about evaluation (larger groups)	Stakeholders should have control over substantive issues, while evaluator provides framework and technical quality
Whitmore, 1988	Community development	Evaluation of youth employment needs in small upstate New York community	External evaluator to facilitate and train participants	Six youth from upstate New York community	Conduct survey of youth employment needs in their community	Links exist between evaluation as empowerment for participants and increased utilization of evaluation results.
O'Neill, 1991	Community development	Evaluation of a village level planning approach for a rural development project in Sierra Leone	Conduct observations, interviews, document review; format worksheets for evaluation workshop	Villagers, extension workers, and project staff	During a 2-day workshop, analyze interview data; identify program issues; generate solutions; and make recommendations	Participant analysis of viewpoints from interviews and project documentation allowed validation of data collected during evaluation and generation of solutions.
Brandon et al., 1993	Community development	Evaluation of the needs of homeless children in Hawaii	External evaluator as group facilitator to ensure equitable involvement of stakeholders	Homeless parents, teachers of homeless children, and homeless shelter providers	Identify and prioritize problems; reconcile differences among stakeholder groups	Participatory techniques improved validity of findings, which serves as an incentive for agencies to fund stakeholder involvement

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Rugh, 1994	Community development	Evaluation of World Neighbors community development program sites in Burkina Faso, Togo, and Mali	Increase local capacity in evaluation	World Neighbors staff person, representative of a funding agency; independent evaluator from host country	Use PRA tools, questionnaires, document review, focus groups	Suggest annual monitoring and evaluation by program participants, with more rigorous external evaluation every 3 years to meet needs of all stakeholders
Zacharakis-Jutz, 1994	Community development	Evaluation of 9 United Way non-profit agencies in U.S.	External facilitator	staff members, volunteers, board of directors, beneficiaries	Determine the evaluation focus; develop evaluation instruments; develop action plan based on findings	Need additional training for participants in evaluation techniques
Choudhary & Tandon, 1995	Community development	Evaluation of the Village Development Trust (VDT) in coastal Tamil Nadu	Coordinate planning of evaluation (coordinator named by VDT)	Field staff of VDT, representatives of intervening agency	Conduct discussions and interviews with leaders of lending associations; observations of meetings; study of records; prepare reports and key findings	VDT enthusiasm for evaluation waned after evaluation team raised difficult questions which jeopardized possible expansion of program. Coordinator of evaluation changed hands 4 times, which made the evaluation difficult.
Choudhary & Tandon, 1995	Community development	Evaluation of the Rural Development Organization (RDO) in India	Team of facilitators from consulting agency to coordinate planning; data collection and analysis	Staff from RDO; representative from donors	Participate in discussions regarding planning of evaluation; objectives; frame of reference; and time schedule; provide input on program effectiveness	Explicit statement of objectives and memorandum of understanding for participatory evaluation by all concerned parties is essential; tension within an organization and unwillingness to act on results can jeopardize the evaluation;

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Choudhary & Tandon, 1995	Community development	Evaluation of Jagriti, a voluntary agency for non-formal education and development in India	Team of facilitators from consulting agency, requested by donor	Staff of Jagriti	Identify issues of concern for evaluation and recommendations based on results	If donors request evaluation, important to delink evaluation results to future funding for participatory evaluation process to succeed.
Choudhary & Tandon, 1995	Community development	Evaluation of an interschool project for slum centers in Bombay	Two facilitators from consulting agency coordinated evaluation	Project staff, teachers,	Plan evaluation, refine data collection plan and design instruments; analyze data and provide feedback	The task of managing the involvement of diverse set of interests in evaluation process (students, teachers, staff, etc.) proved difficult
Choudhary & Tandon, 1995	Community development	Evaluation of the Tribal Development Society (TDS), working in southern Bihar	Two facilitators from consulting agency coordinated evaluation	Project staff	Identify issues of concern for evaluation; provide feedback on program; collect information from tribal villages; analyze results; provide & implement recommendations	Essential to build climate of trust between facilitators and staff;
Choudhary & Tandon, 1995	Community development	Evaluation of the Workers' Education Project in Uttar Pradesh, India	Team of facilitators from consulting agency (requested by donor)	Project staff and volunteers	Identify issues to focus evaluation; provide input on strengths and weaknesses of program;	Focus of evaluation may shift from initial donor intentions through involvement of stakeholders

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Davies, 1995	Community development	Evaluations of credit groups funded by Christian Commission for Development in Bangladesh	Facilitator from Christian Commission for Development (CCDB) processes community groups evaluation of their own projects	Members of the credit groups	On a monthly basis, each credit group reports the single most significant change that occurred amongst group members related to: well-being; sustainability of institutions; people's participation; and one open-ended change.	Innovative example reflects monitoring without indicators, in which CCDB's monitoring does not ask predetermined questions, but focuses on significant examples relevant to community that relate to its long-term objectives
Mapetia & Owano, 1995	Gender issues	Evaluation of the Thamae Women's Development Project (TWDP) in Lesotho	Work with the 10 members of TWDP to plan and conduct evaluation	10 members of project involved in evaluation, with 5 participating full-time in evaluation workshop	Participate in reviewing project objectives & activities; identifying evaluation issues and data required; developing instruments; collecting, analyzing, and reporting data	Challenge of involving members, many of whom were not literate; used hands-on approach with practical examples and conducted an initial 4-day evaluation workshop
Mukherjee & Mukherjee, 1995	Community development	Monitoring of food insecurity amongst rural women in India	Facilitator from ACTIONAID India	Rural women	Draw and discuss food calendars in 1993 and 1995 of food produced and food collected/hunted	Comparison of food calendars from 1993-1995 allowed monitoring of increasing food insecurity in this village, despite national economic gains during this period
Tengue & Associates, 1995	Community development	Mid-term evaluation of the Internal Credit for Rural Promotion (CIPR) in Togo	Facilitate data collection and analysis; conduct meetings to explain role of evaluation	Three different groups: managers, trainers, and beneficiaries participated in evaluation	Provide viewpoints on project success and failure	Lack of communication between different stakeholder groups affected survey results; representation of women low despite their large economic role

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Osuga et al., 1995	Community development	Evaluation of Kipsaraman Integrated Development Program (KIDP) in Kenya	External evaluator to coordinate evaluation	Various stakeholders of project, including project beneficiaries such as women's groups, project staff, and OXFAM	Participate in the use of PRA tools such as mapping, institutional analysis, community meetings, etc. for evaluation of project	Evaluation was designed both to assess project and also to build the capacity of staff and beneficiaries in participatory planning, monitoring, and evaluation
Aidoo, 1997	Community development	Monitoring and evaluation of Communities Forestry and Social Development (COFOSODE) projects in Ghana	Staff from COFOSODE assist local community members in monitoring	Local project management committee of community members	Monitor progress on projects such as palm oil projects, production and planting of seedlings	PM&E allows local communities to accept results and problems in development projects more readily and use to improve projects than if evaluation conducted by outsiders
Bekalo, 1997	Community development	Monitoring and evaluating organizational capacity of non-governmental development organizations (NGDOs) in Ethiopia	Trainers in Organizational Capacity Assessment Tool (OCAT) provided by the International Institute of Rural Reconstruction	Project staff from 12 small-medium NGDOS in Ethiopia	Use the Organizational Capacity Assessment Tool to assess indicators of organizational effectiveness for baseline data and to derive methods of improvement	Well-documented, illustrated PM&E results can attract both internal and external support. Working with several NGDOS built a cohort of professionals with common interest in organizational learning.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Carden, 1997	Community development	Institutional self-assessment by development organizations in West Africa and South Asia funded by the International Development Research Centre (IDRC)	Facilitators from organization called Universalia	Staff from development organizations	Draft the terms of reference, conduct data collection and analysis for organizational assessment	Organizational self-assessment focuses on the organization, rather than specific projects. It is more time-consuming than external review, but time lag from recommendations to implementation of action is greatly reduced.
Community Partnership Center, 1997	Community development	Monitoring and evaluation of the National Empowerment Zone/ Enterprise Community Learning Initiative for community development in U.S.	Local coordinator, regional researcher, and staff from Community Partnership Center at University of Tennessee coordinate evaluation	Representatives from rural communities and organizations on Learning Teams	Design evaluation plan and indicators with regional and national researchers; gather information to evaluate program success and constraints; identify lessons learned; share lessons with your own and other communities	Citizens from rural communities involved in all phases of M&E, from choosing priorities for monitoring to taking action on recommendations. Priority on citizens sharing lessons learned with other communities implementing the EZ/EC projects.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Folkman & Rai, 1997	Community development	Evaluation of a neighborhood revitalization effort called the Neighborhood and Family Initiative (NFI) in Milwaukee, Wisconsin	Team of two evaluators to design and coordinate evaluation	A 12-member group called the "Learning Community" with 6 members from the NFI and 6 community residents	Assess vision of the neighborhood and past accomplishments through dialogue method; submit reports to NFI national project; identify outcome indicators	In participatory self-evaluation, evaluator plays three roles: program evaluator, process consultant, and learning facilitator for participants. Theoretical basis from constructivist paradigm for participatory evaluation may conflict with conventional evaluation belief systems, but need to integrate the two systems.
Gobisaikhan, 1997	Community development	Monitoring and evaluation of a national poverty alleviation program in Mongolia	Initial facilitators from government to introduce and coordinate M&E, consultants from Centre for Social Development to refine M&E plan	Project group members at the community level, poverty alleviation councils at the district and provincial levels	Monitor and record indicators based on progress of project; poverty alleviation council (PAC) at district level monitors projects on monthly basis; at provincial level, on quarterly basis	At provincial and local levels, there was confusion regarding the term "monitoring", as no equivalent word exists in Mongolian. The term is confused with surveillance, so much time was spent initially in training to derive a common understanding of M&E.
Howes & Roche, 1997	Community development	Organizational appraisal of ACORD (Agency for Cooperation and Research in Development) in U.K. using PRA tools	Facilitator from ACORD led workshop on organizational appraisal	Staff with ACORD	Used PRA tools such as matrix ranking, time use charts, informal hierarchy charts, institutional diagrams, and problem trees to evaluate organization	Organizational appraisal using PRA tools integrated into strategic planning process of ACORD; process promoted internal communication within organization.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
IDR & PRIA, 1997 (as cited in Estrella & Gaventa, 1998)	Community development	Monitoring the implementation of World Bank participation policies worldwide	World Bank staff to coordinate trainings and monitoring	Local NGOs from key projects in Asia, Latin America, and Africa; governments; communities	Participate in workshops and trainings on participatory monitoring; collect data on implementation of participation policies in key projects	Purpose of participatory evaluation is public accountability for participatory strategies in World Bank projects
Kar et al., 1997	Community development	Participatory impact assessment of the Calcutta Slum Improvement Project (CSIP) in India	Joint evaluation team including consultants and project staff	Local residents by social grouping (women, youth, elders, political leaders, etc.)	Provide local perceptions of project achievements and impacts on their livelihoods using PRA tools	Past conventional project evaluations had relied on quantitative surveys which had not provided enough information on true project impacts on people's lives. Participatory impact assessment allowed in-depth data, and highlighted difference in men's and women's view on project.
Kirk, 1997	Community development	Monitoring of U.K. Department for International Development's Karnataka Watershed Development Project in southern India	Facilitator from project staff	Members of community level organizations (users), Microwatershed Development Committee (project management), and NGOs	Monitor indicators that allow different stakeholders to assess their own performance or that of the other stakeholders involved in project	Implementing PM&E systems requires skills and experienced practitioners familiar with the local context

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Kopiyo & Gachoka, 1997	Community development	Evaluation of community needs, actions, and outcomes with organization Gender Sensitive Initiatives (GSI) in Kenya	Local facilitator from Gender Sensitive Initiatives coordinates the Participatory Evaluation Process (PEP)	Community members, local government staff, and local leaders	Community evaluates needs and builds organizational structures and networks to address the needs. Uses GSI resource center as focal point for activities.	Importance of gaining support from local leaders and administrators before engaging in participatory evaluation process with community.
Noponen, 1997	Community development	Monitoring and evaluation of women's livelihood and micro-credit programs in India	Facilitators from program staff	Members of low income women's savings and credit programs	Women document pictorial diaries of change related to credit program in "learning diaries". Track change over time and aggregate data to guide decisions	Emphasis on this pictorial M&E system is on internal learning by women's groups, which also benefits staff and donor community. Pictorial system suited to low literacy and poverty level.
Osuga & Gabulaya, 1997	Community development	Monitoring the livelihoods of the Dinka people in Africa by OXFAM	Staff from OXFAM to coordinate monitoring	Local farmers	Monitor key indicators of livelihood, such as crop development, grazing availability, livestock sales, water availability, etc.	Local monitoring encourages local people to analyze their own situation using participatory methods, as opposed to the more extractive method of rapid rural appraisal by outsiders
OUTREACH, 1997	Community development	Capacity assessment of government departments in the District Poverty Initiative Programme (DPIP) in Andra Pradesh, South India	Evaluators from OUTREACH, a developmental organization	Government officers from each district, community members	Participate in PRA exercises such as Venn diagrams, trend analysis, social mapping, wealth ranking, as well as interviews and focus groups	PRA exercises for assessment showed government officials the value of soliciting opinions from village level. Officials noted that the use of PRA improved their relationships in the villages.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Udyogini, 1997	Community development	Monitoring and evaluation of micro-enterprise projects with low income rural women in India	Facilitator from project staff	Low income rural women participating in micro-enterprise projects	Keep a pictorial response booklet to monitor their progress on the project	Use of pictorial response booklets allows monitoring and feedback from low-income women with low levels of literacy
Ward, 1997	Community development	Development of a Community Monitoring System (CMS) for the Livingstone Food Security Project in rural Zambia	Trainers from CARE Zambia	Members of Village Development Committees	Monitor household livelihood trends through PRA tools and established criteria	Providing ownership of monitoring processes should involve more than just villagers collecting information for the project. Community should be involved in analyzing and using the data themselves, which was a lesson learned during the project.
Abes, 1998	Community development	Three-year longitudinal evaluation of the effects of the Education for Life Foundation leadership training program in the Philippines	Facilitators and trainers from Education for Life Foundation	Philippine Psychological Research and Training House (PPRTH); leader researchers from community; ELF staff; leader graduates, non ELF-trained leaders, community members	Leader researchers were graduates of program trained in data collection & analysis; PPRTH helped with planning and instrument design; non ELF leaders were control group;	Participation of the researchers who were trained in evaluation enhanced the validity of data as they had grasp of realities of grassroots Filipinos.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Anderson & Gilsig, 1998	Community development	Evaluation of the Canadian International Development Agency's (CIDA) human resource development projects through the Southeast Asia Ministers of Education Organization (SEAMEO)	External evaluation team to coordinate evaluation	SEAMES, CIDA, the Project Advisory Committee, the Canadian partner universities, the involved SEAMEO centers, and SEAMEO training graduates	Approve the terms of reference; provide data on project effectiveness and impacts; provide feedback on draft report; complete surveys, interviews, and self-assessments	Costs and additional time required for participatory evaluation should be viewed by donors as a capacity-building part of the development project, rather than a separate component not charged to programming.
Ara, 1998	Community development	Assessment of flood proofing pilot project by CARE Bangladesh	Facilitators from CARE staff	Village committee members and villagers	Identify key indicators and decide how to evaluate project. Conduct village meetings for impact assessment and planning.	Use of pictorial indicators aided participation from all sectors of village. Findings from PM&E helped to develop cost-effective and relevant methods for flood proofing and allowed communities to prioritize their needs.
Bandre, 1998	Community development	Self-evaluation of World Neighbors projects at the village level in Burkina Faso	Technical team from World Neighbors and Advisory Committee of villagers	Villagers, village association leaders, resource people	Villagers rate their annual progress through matrix of indicators for activities; Participatory tri-annual evaluation involved villagers in assessing program's impact on villagers well-being.	Despite use of visual methods, difficulty in dealing with high levels of illiteracy for PM&E. Importance of finding good translation of PM&E concepts--such as indicator, objective, matrix--in local languages.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Ellis, 1998	Community development	Evaluation of the 10-year Integration of Women in Rural Development in Rose Hall, St. Vincent by the Women and Development Unit at the University of West Indies	External project coordinator to facilitate evaluation	Rose Hall Community Working Group, community groups	Initiate evaluation; identify evaluation questions; participate in data collection and analysis using discussions, skits, storytelling, mapping, and evaluation workshops.	Evaluation helped community members to focus and reflect on project impacts and identify causal relationships between changes in attitudes and behavior and the development process.
Kassam, 1998	Community development	Evaluation of the training component of a rural development project in Bangladesh	External facilitators to coordinate evaluation	Beneficiaries of the project and field staff	Provide feedback through surveys and dialogues with evaluators	Combination of traditional survey methods and participatory dialogue method enriched the evaluation findings.
Mullinix & Akatsa-Bukachi, 1998	Community development	Training and evaluation of women's programs by the YWCA in Kenya	Workshop trainers to facilitate capacity-building process	YWCA field workers and women's groups	Participate in trainings and implementation of participatory evaluation to design an evaluation plan, identify indicators, record and analyze data, and report evaluation findings	Training in facilitation of participatory evaluation is critical component for successful capacity-building within an organization
Torres, 1998	Community development	Evaluation framework for monitoring local development in Ecuador, developed by COMUNIDEC, a national NGO	Staff with national NGO train and facilitate local project teams to use SISDEL, the evaluation framework	Local project teams include extension agents and local leaders	Project teams uses SISDEL to collect data on indicators for desired impacts at 3 levels: individuals/families; organizations; and local society. Use data to make management decisions.	Local authorities or institutions must commit to PM&E for entire project cycle. Collective learning occurs when local institutions, outside experts, and authorities share in the PM&E process.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Vietnam Sweden Mountain Rural development Programme, 1998 (as cited in Estrella & Gaventa, 1998)	Community development	Project planning, monitoring and evaluation of the Vietnam Sweden Mountain Rural Development Programme (MRDP) in northern Vietnam	MRDP facilitators established Management Information and Learning System (MILS) for use by stakeholders	Local farmers, village management groups, commune authorities, national, provincial, and district government authorities	Use of PRA tools such as field surveys, village meetings, wealth ranking, land use transects at local community level by farmers. Results are communicated to next level of village, commune, district, province, ministry.	Central role of local farmers in the management information and learning system (MILS) allows continuous "bottom-up, top-down" dialogue between different management levels.
Villiers, 1998	Community development	3-week training workshop on participatory monitoring and evaluation for the NGO Training project in Vietnam	Three workshop facilitators	18 workshop participants from NGOs, government departments, and organizations in Vietnam responsible for development projects	Learned PRA tools for PM&E and applied 7 steps to developing PM&E system with villagers in CARE rural development project for fieldwork. Steps for PM&E included diagramming current and future situation; identifying stakeholder goals and impact indicators; prioritizing indicators; and deciding who will monitor each indicator	Important to incorporate organizational learning as part of training in participatory monitoring and evaluation. Participation may conflict with desire of donors and government to control inputs and outcomes.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Verma & Mayeske, 1990	Extension	Review of six evaluability assessments of cooperative extension programs in U.S.	Technician and facilitator to "working group"	Individuals involved in specific cooperative extension programs	Identify and interview stakeholders; analyze documents; identify stakeholder needs and differences; make recommendations	Process increased evaluation skills of team members
Gariba, 1995	Health (water & sanitation)	Participatory impact assessment of water supply and sanitation improvement projects for Northern Regional Rural Integrated Programme (NORRIP) in northern Ghana	External evaluation team to facilitate impact assessment	CIDA (donor), government line agencies, NORRIP staff, village leaders and residents	Allocate scores on each poverty indicator and village development indicators in the evaluation framework called the Village Development Capacity Index (VDCI)	Process of scoring indicators by each major stakeholder group facilitated dialogue and consensus building among stakeholders. Scores on the index can be used by monitoring teams to track change over time.
Johnson, 1995	Health (water)	Impact evaluation of a drinking water system in village in southern India	External evaluator to facilitate community-based evaluation	5 development workers on evaluation team; other community members involved in evaluation	Use PRA tools to help community members assess impacts of program	Using visual PRA tools removes literacy/numeracy as criteria for participation

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
RESCON, 1995	Health (water & sanitation)	Evaluation of the Rushumbe-Namande Water and Sanitation Project in Zimbabwe	2 external evaluators to facilitate community-based socio-economic and socio-ecological study and assessment of project impacts	3 community members (school teacher, project coordinator, and female village health worker)	Design objectives of study; develop questionnaire and interview instruments; collect and analyze results; make recommendations	Important to allow community input on problems & solutions and review initial draft of evaluation report. Also critical to analyze institutional structures in community
Campos & Coupal, 1996	Health (water & sanitation)	Evaluation of a water and sanitation project by UNDP (United Nations Development Program) in Swaziland	Primary evaluation team includes 2 international consultants and 3 national consultants to lead evaluation and collect data	Field staff from UNDP and Rural Water and Sanitation Dept (RWSB), rural women, tribal chiefs, program beneficiaries	Generate evaluation questions & concerns; review and categorize findings; make recommendations for action	Most terms of reference (TOR) for evaluation must include pre-determined evaluation questions. PM&E requires that donors agree that a question generation process with stakeholders be part of the TOR.
Osuga & Gabulaya, 1997	Health (water)	Evaluation of Water Aid Kabarole District Water and Sanitation Project in Uganda	External facilitator from Uganda and staff from Water Aid U.K. to facilitate evaluation	Project staff and project partners formed core review teams after training; community members participated in evaluation	Conduct participatory planning and organizational review; training in data collection and analysis using PRA tools; collect and analyze data; prepare report (core team)	Participatory evaluation required training for staff members but resulted in capacity building among national staff, district staff, and partners.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Livingstone, 1998	Health (water)	Monitoring and evaluation of the Ghana Water and Sewerage Corporation (GWSC) Assistance Project, funded by the Canadian International Development Agency (CIDA) and the government of Ghana	Four-person internal monitoring team of both Ghanaians and Canadians to conduct evaluation	Community members	Provide data through participatory discussions and semi-structured interviews to address questions in a monitoring and evaluation matrix	Internal monitoring team developed because semi-annual external evaluation by donors for compliance was not meeting project needs. Combining continuous internal monitoring with periodic external evaluation for compliance meets needs of project and donors.
Hall, 1986	Health	Evaluation of the Functional Literacy, Health, and Nutrition program (FLHNP) in Zambia	Technician, facilitator, and liaison between 8 team members and 21-member Evaluation Advisory Team	Evaluation Advisory Team (21 members) from interest groups and government agencies involved in program; and 8 evaluation team members	8 team members collected data at village level; Advisory team reviewed and modified evaluation proposals; identified resources, and reviewed final reports	Post-evaluation questionnaires revealed that participants felt they had increased their skills in evaluation. Six months after study, 2 team members were conducting their own participatory evaluations for health agencies
Rugh, 1986	Health	Annual evaluation of village health status in Kenya	Conduct community diagnosis of village health status; report findings for decision-making by community members	Community health workers, accompanied by village elder and sub-chief	Survey village using interviews, observations, document analysis to assess health status using indicators (e.g. # of latrines, # of children immunized, etc.)	Based on findings of health workers, community passes resolution to give 2 weeks for villagers who did not have latrines to build them. Shows utilization of results from participatory evaluation.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
De Clerk, 1990	Health	Evaluation of health intervention seminar in Paraguay	Technical advisor to aid participants in developing assessment tools	Participants in development training seminar	Develop pretests and posttests to serve as evaluation tools for seminar, analyze findings	Participants worked in interdisciplinary teams to assess their own learning; assessment as a learning process
Choudhary & Tandon, 1995	Health	Evaluation of the Andhra Pradesh Balwadi Programme (APBP) for nonformal education and nutrition in India	Facilitator from intervening agency (contracted by donors)	Core team from the program staff implemented evaluation; priests, sisters, and teachers also involved	Decide objectives of evaluation, involvement of people in evaluation, and methods used; collect and analyze data;	Time required to train core team in evaluation skills;
Cornwall et al., 1997	Health	Evaluation of the Makueni Community-Based Nutrition Project (MCBNP) in Kenya	External evaluation team as facilitators of process	Donor representatives, government officers, project field staff, nutrition-related, community organizations, community members	Identify project benefits, negative impacts, recommendations for improvement, and feedback from various stakeholder groups	Assessing perspectives of different stakeholders revealed highly significant areas for further improvement. Participatory evaluation allowed stakeholders to learn from each others perceptions.
Osuga & Gabulaya, 1997	Health	Evaluation of Community Based Health Care (CBHC) in Uganda	Trainer and facilitator in using participatory impact assessment	Community members working or involved in Community Based Health Care projects	Use participatory tools such as matrix scoring and ranking and situational analysis to assess impacts of program	Training key actors in the community health care programs provided them with knowledge and skills in using PM&E methods

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Satyamurti, 1997	Health	Evaluation of a 10-year bilateral health project implemented by USAID and the Government of India throughout India	Evaluators from Society for Participatory Research in Asia and Network of Regional Support Organizations	Representatives from stakeholder groups such as villagers, organizations, etc. of the 10-year health project	Participate in PRA exercises such as social mapping, focus groups, etc., as well as surveys regarding the program	Evaluation combined traditional quantitative data collection through random survey, with participatory tools from PRA. Generated valid data for policy making at national level.
Feuerstein, 1998	Health	Evaluation of primary health care in Patna, India	Facilitator to train community health and development team and coordinate evaluation	20 staff members working on the community health and development team	Identify success indicators; design data collection tools; collect and analyze data; prepare and disseminate findings; implement recommendations	Involving participants from planning stages of evaluation to implementation of recommendations critical aspect of this evaluation.
Parachini & Mott, 1998	Health	Citizen monitoring, evaluation, learning and action (CMLA) of health care projects in Boston, MA by organization Health Care for All (HCFA)	Health Care for All (HCFA) staff organize community members in monitoring efforts and operate helpline	Community members in Boston area	Research local health issues and policies; lobby for public accountability in health care and health care reform;	Linking learning and action to community-based monitoring of public health care issues results in concrete results.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Robinson & Cox, 1998	Health	Process evaluation of community capacity building through the Nepal Health Development Project (HDP)	Team of core evaluators included 1 Nepali, and 3 North Americans	Team of counterpart evaluators included 22 Nepalis, (18 from villages, 3 from district health system, and 1 from Kathmandu) with support from HDP staff	Collaborate with core evaluators in community data gathering through participatory strategies such as social maps, community meetings, village debriefing sessions,	Process evaluation used a conceptual model that looked beyond outputs of project to capacity building, but required large resources in terms of people and time (560 person-days to complete with average of 20 days/person)
Lytle, 1988	Literacy	Assess Learning in Adult Literacy Evaluation Project in Philadelphia	Technician and facilitator	Teachers, students, administrators	Design assessment tools and assist with assessments	Assessment should be a learning process, integrated into the classroom
Wolf, 1988	Literacy	Participatory training project in alternative assessment by Institute for Literacy Studies in New York	Trainer	Students and teachers	Involved in training seminar on using ethnographic interviews for assessment	Advantages include cost-effectiveness, as well as linking learning with assessment
Showers & Malahleha, 1992	Natural resources	Historical environmental impact assessment for soil conservation in Lesotho in the 1930s and 1940s	Researchers to conduct key informant interviews	9 key informants who were local elderly villagers	Provide information on historical perspective on soil conservation in the 1930s and 1940s through key informant interviews	Oral testimony used in participatory impact assessment depends on trust and rapport between local residents and researchers

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Cross, 1993	Natural resources	Monitoring past environmental change in the Sahel, Africa	Researchers to conduct semi-structured interviews	Elderly farmers, pastoralists, and refugees	Provide information through key informant interviews on traditional environmental knowledge and environmental change	Collection and analysis of data using oral testimony may require more time than possible for many PM&E projects
Marks, 1994	Natural resources	Wildlife surveys by local hunters in Zambia	Researchers to coordinate surveys and analysis of data	Local hunters	Record and monitor wildlife counts	Involving local hunters in monitoring emphasizes local knowledge and skills and empowers local people, but analysis still completed by outsiders
Kaul Shah, 1995	Natural resources	Pre-project appraisals and monitoring of Aga Khan Rural Support Programme's (AKRSP) community projects in India	Facilitator from AKRSP	Local villagers	Draw and prepare detailed maps of village that incorporates analysis of available resources, uses, ownership, constraints, etc. Maps include proposed natural resource projects.	Maps of natural resources drawn by villagers are displayed in local village. In meetings and project reviews, maps used to monitor project activities. PM&E allows on-going monitoring by local communities.
Alexandra et al. 1996 (as cited in Abbot & Guijt, 1998)	Natural resources	Monitoring of environmental conditions by community groups in Australia	Community environmental monitoring (CEM) groups	Between 150,000-200,000 members of community environmental monitoring groups	Monitor local environmental conditions, water quality issues, the effectiveness of conservation strategies, etc.	Recent increases in participation in community environmental monitoring groups fueled by increased public awareness of environmental issues and desire for public participation in environmental decision-making

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Ford et al., 1996	Natural resources	Monitoring and evaluation of community-based resource management practices in Kenya	Facilitators from Egerton University	Community members, including men, women's groups, and youth groups	Use participatory tools such as mapping, ranking, focus groups, and institutional diagrams to select indicators, devise baseline data systems, and monitor indicators	Monitoring of locally derived indicators is feasible and helps to mobilize community support for future plans and allows "scaling up" of data to inform government and donor policy
Stockdale & Ambrose, 1996	Natural resources	Community inventory of natural resources in East Kalimantan	Community groups initiated and coordinated inventory	Local farmers	Inventoried all tree resources in community to seek compensation from an industrial plantation project on Dayak farmers' gardens	Community-initiated inventory estimated past harvest quantities, and thus reliability may be questioned by government officials. Need to build trust between government and community.
Chatterjee, 1997	Natural resources/ sustainable development	Assessing progress toward sustainability in Tumkur in the Indian state of Karnataka in collaboration with I.U.C.N.	Field team of facilitators from Development Alternatives in India	Village councils and village communities	Conduct situation analysis of major problems facing community; use tools such as mapping to map indicators related to natural resources and well-being; use IUCN tools of Barometer of Sustainability to plot indicators for sustainability; assess necessary actions.	Shift toward PM&E will require moving from perception of M&E as accounting and donor-driven function. Also will require shift from emphasis on "success stories" to acknowledging lessons learned from failures.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Grundy, 1997	Natural resources	Quota setting within CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) in Zimbabwe	Facilitator leads workshop with all stakeholders to set wildlife quotas	All stakeholders in quota setting process, including community members, Department of National Parks, Rural District Council, ward or village game guards, safari operators, technical specialists	Provide information to set hunting quotas for wildlife harvests from different stakeholder perspectives	Participatory quota is obtained from more reliably based information than in the past. Also, stakeholders less likely to question the final quota as they were involved in the entire process.
Cornwall et al., 1989	Forestry	Evaluation through community theater of a community woodland resource management project in southern Zimbabwe by ENDA-Zimbabwe (Environment and Development Activities), an indigenous NGO	Local project staff, a community worker, and village researchers facilitate the community theater workshop	Community members	Discuss key concerns and conflicts regarding community woodland project and possible solution; integrate these issues into a community theater piece	Locally based theater for project evaluation allows people to develop ideas and solutions themselves, rather than viewing outsiders as providing solutions.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Weber, 1989	Forestry	Environmental impact assessments (EIA) for community forestry activities	Facilitators such as extension agents and field staff coordinate EIA	Local rural people, field project staff, host-country government staff, and donor representatives	Provide feedback through interviews and meetings regarding forestry projects and environmental issues	This method aims to addresses weaknesses in past methods for environmental impact assessments that have not incorporated perceptions of local users
Kiwara, 1995a	Forestry	Evaluation of the Nkoranga Reforestation and Water project in Tanzania	Facilitate evaluation and conduct interviews and focus groups	11 members of the water project	Identify evaluation issues with larger women's group; participate in focus groups; provide data via interviews	Participants decided to conduct their own small-scale participatory evaluations monthly. Process led to increased skills in evaluation.
Grundy, 1997	Forestry	Monitoring of woodland management in three villages in Marange Communal Area in Zimbabwe	Researcher from Zimbabwe College of Forestry facilitated initial PRA and participatory assessment of resources	Community members	Use PRA methods to gather information on historical, environmental, and social situations in village related to wood use; assess woodland resources and establish plots; monitor woodland sample plots.	Community members are not involved in analysis of information, which may result in lack of ownership and responsibility for final outcomes. Need to involve community in all aspects of project.
Rai, 1998	Forestry	Monitoring and evaluation of the Nepal-UK Community Forestry Project which works with 1500 Forest User Groups (FUGs) in Nepal	Project team composed of Department of International Development and Department of forest staff facilitating M&E with FUGs	Members of the Forest User Groups (FUGs)	Self-monitor forest resource management and institutional development through pictorial formats and indicators in a FUG "health check"; Map resources to prioritize needs and link PM&E to action;	The involvement of forest users in designing their own M&E system encourages learning and builds sustainable institutions; Pictorial formats allow participation of non-literate, semi-literate, and literate community members.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Ayers, 1987	Public schools	Assessing the effectiveness of a shift from a junior high to middle school structure in Guam	External facilitator; worked as evaluator in the district evaluation office	Teachers, union representatives, community members, and administrators	Involved in design, administration, and interpretation of surveys and interviews	Participants preferred the participatory process over other evaluation methods, but rated the process higher than the product or utilization
Donmoyer, 1990	Public schools	Evaluation of K-5 language arts and reading program in U.S.	Technician and negotiator among stakeholders	Teachers, principal, administrator, parents (12-member team)	Derive and prioritize evaluation questions; aid in data collection; negotiate recommendations	Evaluator must deal with problems of status differences among stakeholders, as well as time-consuming negotiation process
Sick & Shapiro, 1991	Public schools	Evaluation of teacher involvement in decision-making in public schools in U.S.	Internal evaluator as coordinator	12 teachers	Determine evaluation questions; develop the survey; analyze results	Select participants on a voluntary basis; ensure evaluator acts as facilitator
Hart et al., 1994	Public schools	Evaluation of the Canadian Yukon Native Teacher Education Program	External evaluator to use data collection and findings as dialogue between evaluators and stakeholders	Faculty, teachers, students	Respond to "Working Notes" from evaluation team; collect data through interviews	Need for negotiation of fair access to findings; tendency for evaluation to lean toward interpretive, rather than participatory methods

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Cousins, 1995	Public schools	Evaluation of "Transition Years initiative" in the Rockland school district in Ontario to reduce school dropout	External evaluator to coordinate evaluation and train participants in evaluation	Steering committee of two superintendents, one principal, one vice principal, four teachers, and one curriculum coordinator	Identify evaluation questions; design interview guides; conduct interviews; analyze data; provide feedback on report	Participatory evaluation enhanced organizational learning and professional development of participants.
Earl, 1995	Public schools	District-wide evaluation of school improvement in the metropolitan Toronto area by Scarborough Board of Education	Scarborough Board of Education Research Unit to coordinate evaluation	Needs assessment committee of 2 principals, 2 administrators, a department head, and a curriculum coordinator to define evaluation issues; conduct interviews; analyze data; write recommendations and present results	Involvement of key stakeholders such as administrators resulted in implementation of recommendations from evaluation and organizational learning	Involving primary users enhanced utilization of findings from evaluation.

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Green & Southard, 1995	Public schools	Evaluation of 3 public schools in Florida for improvement and accountability	Facilitators to derive evaluation checklist from professional evaluation standards and participatory evaluation literature	School advisory council of teachers, students, parents, and community members	Apply a checklist for participatory evaluation to school to assess focus of evaluation, stakeholder identification and involvement, organization and negotiation process, technical methods for evaluation, reporting and evaluation utilization.	Participatory evaluators need to establish the facilitative nature of their roles with stakeholders, but be ready to assume responsibilities as needed.
Lee & Cousins, 1995	Public education	Evaluation of school-based initiatives for at-risk students in Manitoba schools in Canada	Evaluation consultant to provide technical support to schools in evaluation	Project team members involving teachers at schools and administrators	Design evaluation focus; collect and analyze data, identify recommendations and disseminate findings	Need to consider the time demands for participatory evaluation on both participants and external consultant
Mertens, et al., 1995	Public education	Evaluation of a special education training project in Egypt	Evaluation personnel from the U.S. to conduct training in evaluation	Team of Egyptian teachers and administrators and U.S. teachers involved in training	Provide feedback through interviews; review feedback and results;	Participatory evaluation is more labor intensive than traditional evaluation and these needs should be considered in developing country context.
Weinbaum, 1996	Public education	Assessment of four after school programs in New York City from 1993-1995	Facilitator to conduct training	Teachers, staff	Clarify program objectives, assess their own performance	Participatory assessment process was effective in building the capacity of staff to evaluate their own performance and suggest recommendations for improvement

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
McCulloch, 1997	Public education	Evaluation of tutor performance in distance learning at Open University U.K Business School	Tutor in the distance learning to design and collect data for evaluation	Students	Provide data on student feedback regarding tutorial support and performance; interview other students regarding tutor;	Issue of power central to participatory evaluation, as process allowed students to give feedback on tutor's performance but with little power to affect programming changes. Need for PM&E to be fully integrated into programming.
Armonia & Campilan, 1997	Review	Review of PM&E studies in diverse fields in Asia: agriculture (n=7); governance (n=4); health (n=8); livelihoods (n=2); environment (n=6); and community development (n=7).	In most projects, PM&E tools were introduced by outsiders with expectation that tools would be sustained by insiders through local capacity-building	Includes stakeholders such as project staff, farmers, community members, NGOs, government agencies, researchers.	In review, role of participants ranges from an external team conducting evaluation, to combination of internal/external team members; to fully internal team planning evaluation, collecting and analyzing data, and using results.	PM&E experiences in Asia can be categorized by the following 14 types: (1) M&E in agricultural research; (2) participatory rural appraisal/participatory learning; (3) rapid assessment procedures; (4) participatory evaluation; (5) participatory monitoring/PM&E; (6) beneficiary assessment/ stakeholder evaluation; (7) self-evaluation; (8) process evaluation; (9) community resource balance sheet approach; (10) development of PM&E indicators; (11) building organizational systems for PM&E; (12) development of support services & materials for PM&E

Table 4-2--continued

Author	Field	Focus of evaluation	Facilitator	Participants in evaluation	Role of participants	Recommendations/findings
Abbot & Guijt, 1998	Review	Review of 10 case studies using participatory methods (PRA-based, n=5; oral testimony, n=2; ecological approaches, n=3) to monitor environment	In 80% of cases, local people had low participation in the design of the monitoring process. Outside researcher or facilitator guided monitoring system.	Participants included stakeholders such as farmers, local hunters, pastoralists, community members	Participation in 100% of studies high for data collection; 40% of studies rated high for participation of stakeholders in data compilation, analysis and dissemination;	Need to address the trade-offs and costs of PM&E, the lack of baseline data, the uses of monitoring data, the most appropriate roles for different stakeholders, the real interests of stakeholders in developing PM&E process, and ways of maintaining interests of different stakeholders.
Shapiro, 1988	Women's studies/ gender issues	Evaluation of the University of Delaware's Women's Studies program	External evaluator knowledgeable about women's studies programs	Any faculty/staff interested in providing feedback regarding program	Generate feedback; provide evaluation issues and questions	Findings resulted in high degree of utilization of results

Table 4-3: Recommendations from literature review of participatory evaluation (PE)

Recommendation/finding	N=111
• PE involves capacity-building/learning	21
• Need to adapt research methods/vocabulary to local context	11
• Need to overcome hierarchy/lack of communication channels among multiple stakeholders and build communication and trust	9
• PE results in utilization of evaluation results	8
• Need for input from multiple stakeholders on indicators/ need for negotiation among indicators due to differences in stakeholders	7
• Need to include both scientific/traditional methods and community needs	7
• PE takes time	7
• PE must be integrated into all phases of project cycle, from planning to data collection, analysis, and use of results and recommendations	6
• PE promotes communication among stakeholders and provides input from multiple stakeholders	6
• PE allows collection of locally accurate data and validation of data	5
• PE may not be implemented fully if not institutionalized or if other barriers exist, such as lack of support, resources, or participation in institution	4
• PE provides direction for project improvement	3
• Evaluator should act as facilitator and technical support	3
• Need to include PE and periodic external evaluation	2
• Need to disassociate evaluation results from accountability/funding and allow presentation of lessons learned and failures	2
• PE enhances success in project implementation	1
• Need for input from stakeholders in designing the evaluation	1
• PE does not have to involve all stakeholders in all aspects of M&E	1
• Need for consistency/stability in evaluator or coordinating team	1
• Need to recognize cost-effectiveness of PE	1
• PE results in on-going assessment and monitoring by local communities	1
• Participants prefer PE to conventional evaluation, but rated process higher than product	1

Table 4-4: Goals and objectives of trainings on participatory evaluation

Overall goal of the workshop:

To enhance the understanding and use of participatory evaluation among staff and teachers of the Wildlife Clubs of Kenya

Specific objectives of the workshop:

By the end of the workshop, participants will be able to:

- State the purpose and importance of evaluation for environmental education programs
- Identify stakeholders in WCK programs and their interest in evaluation
- Identify differences between participatory and conventional evaluation
- Assess the current practices and needs of WCK with respect to program evaluation
- Identify measurable objectives for use in evaluating WCK projects
- Plan an evaluation by identifying evaluation questions, sources of evidence, and indicators
- Develop and use data collection tools in an evaluation, using mapping, surveys, interviews and observation
- Analyze, interpret, and present data from an evaluation
- Develop an action plan for applying program evaluation to WCK activities as part of the WCK incentive program

Table 4-5: Results of ranking exercise: Time spent on tasks by WCK staff

Task in the project cycle	**Mean rank by staff**
Coordinating logistics of program	7.8
Implementing program	7.2
Designing the program	5.5
Writing the final report	4.5
Documenting data to monitor program effectiveness	4.0
Writing proposals	3.5
Locating funding	2.1
Pilot testing the program	0.9
Evaluating impacts of the program	0.6

Table 4-6: Workshop schedule

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
What is evaluation? The evaluation matrix: evaluation questions, sources of evidence, and indicators The evaluation process	What is participatory evaluation? Introduction to the fieldwork: Planning your evaluation Tools for evaluation: mapping, songs & art Interviews	Tools for evaluation (cont.): Surveys Observations and record-keeping Data analysis and reporting Small group work to prepare for fieldwork	Fieldwork: evaluation of the WCK Ecology program Analysis of data from fieldwork Preparation of presentations	Presentation of evaluation results The incentive program: generating questions, sources of evidence, and indicators for WCK Action plans for the incentive program

Table 4-7: The evaluation matrix in everyday life: Results from workshop exercise

EVALUATION QUESTIONS	SOURCES OF EVIDENCE	SIGNS (INDICATORS)
How successful was the farmer's crops?	• Asking questions • Observation • Discussion	• Good harvest • A lot of food in the house • Enough money for school fees • Well-dressed family • Organized family • Employed workers to help • Farmer was composed, confident, healthy • Able to help the poor farmer • Son able to learn well • Nice furniture in the house

Table 4-8: Current methods of evaluation and proposed changes: Results from 7 workshops

How do we currently evaluate WCK programs?	S*	A	C	R.V.	M	N	W	%
• **# of participants in activities**	X	X	X	X	X	X	X	100%
• **# of activities completed**	X	X	X	X		X	X	86%
• # of registered members	X	X		X		X	X	71%
• Feedback from community and stakeholders	X	X	X	X			X	71%
• Student interest and feedback	X	X	X	X				57%
• Quality of presentations during student rallies & competitions	X	X			X			57%
• Discussions during meetings	X	X		X		X		57%
• Reports to WCK headquarters	X	X	X		X			57%
• Observations/visits to projects	X		X		X			43%
• Questionnaires	X	X						29%
• # members/participation in action group		X						14%
What changes would we like to see in evaluation of WCK programs?								
• **Standardize methods for evaluation within WCK**	X	X			X	X	X	71%
• **Provide incentives for evaluation and active clubs**			X	X	X	X	X	57%
• Involve teachers & students in evaluation/bottom-up approach			X		X	X		43%
• Follow-up on club projects & students		X	X				X	43%
• More feedback and visits from headquarters to clubs					X	X	X	43%
• Assess changes in attitudes and knowledge	X	X						29%
• Have teacher meetings to discuss activities				X		X		29%
• Conduct continuous evaluation			X	X				29%
• Form evaluation committee to visit and assess clubs		X				X		29%
• Monitor clubs through correspondence	X							14%
• Assess impact of WCK activities on local environment		X						14%

* S = Staff, A = Action Group, C = Coast, R.V. = Rift Valley, M = Meru, N = Nairobi, W = Western

Table 4-9: Evaluation matrix for the nature trail evaluation: Example from workshop activity

Evaluation Questions	Sources of Evidence	Indicators/Signs
PLANNING • Were the resources adequate?	• Observation	• Support materials should be available and appropriate for level of students
PROCESS • How effective is the implementation of the nature trail?	• Observation • Interviews • Mapping • Surveys	*Students:* • taking notes • asking questions • acting excited *Nature Trail:* • accessible • species diversity • well-defined trails *Facilitator:* • Audible • Competent • Variety of methods of communication
PRODUCT • Were the objectives met? • What are recommendations for improvement?	• Interviews • Mapping • Surveys	*All objectives met* • Identify at least 3 habitats within the nature trail • Identify at least 4 various species of plants and/or animals • Describe at least 4 plant adaptations • Apply critical thinking skills to conservation in Kenya

Table 4-10: WCK Incentive Program: Identification of indicators from workshops

Evaluation Questions	Sources of Evidence	Indicators	*S	A	C	R.V.	M	N	W	%
PLANNING	**CLUB**	**CLUB** (N=7 workshops)								
		• # of students involved in planning	X	X	X			X	X	71%
How effective is the planning of your activities?		• # of meetings held/regular meetings held				X	X	X		43%
		• calendar of activities created			X	X		X		43%
		• resources/funds available or assessed			X	X		X		43%
	ACTION GROUP	**ACTION GROUP** (n=6 workshops)								
	reports	• # of meetings/contacts with club	X			X	X	X		67%
	minutes	• members/stakeholders involved in planning	X	X	X					50%
	observation	• documented minutes of meetings		X			X	X		50%
		• calendar of activities		X		X		X		50%
		• resources available/donor support			X	X		X		50%
		• 80% of action group attending national annual general meeting			X					17%
	REGIONAL OFFICE	**REGIONAL OFFICE** (N=2 workshops)								
	discussion	• involvement of stakeholders in planning	X	X						100%
	observation	• documented reports of activities/meetings	X	X						100%
	record keeping									
	interviews									
	surveys									

Table 4-10–continued

Evaluation Questions	Sources of Evidence	Indicators	*S	A	C	R.V.	M	N	W	%
PROCESS	**CLUB**	**CLUB** (N=7)								
	photographs	• variety of activities conducted	X	X	X	X	X	X	X	100%
How effective is the	artwork	• # of members/renewal of membership	X	X		X	X	X	X	86%
implementation of	surveys	• participation in regional/national	X				X		X	43%
your activities?	interviews	activities								
	letters of	• active involvement of students		X	X			X		43%
	appreciation	• gender balance among members	X	X						29%
		• innovative conservation projects	X							14%
		• record-keeping/minutes		X						14%
		• submission of articles to *Komba* magazine	X							14%
	ACTION GROUP	**ACTION GROUP** (N=6)								
	registration records	• # (%) of clubs & members participating	X	X	X	X	X	X		100%
	reports	in regional activities								
	surveys	• variety of activities conducted	X	X	X	X	X	X		100%
	interviews	• calendar of activities followed	X	X		X		X		67%
	observation	• # of clubs registered/renewed membership		X			X	X		50%
	video	• # of visits by clubs to parks & reserves		X		X	X			50%
		• regular elections for members held	X	X						33%
		• quality of presentations at rallies				X		X		33%
		• # of visits by action group to clubs					X			17%
		• organization of successful mobile	X							17%
	REGIONAL OFFICE	education unit visit								
	observation	**REGIONAL OFFICE** (N=2)								
	survey	• variety of activities conducted	X	X						100%
	interviews	• renewal/recruitment of members	X	X						100%
	record keeping	• maintenance of facilities and center	X	X						100%
	minutes	• # of students/clubs participating in								
	video	activities	X	X						100%
		• high demand for educational programs								
		• calendar of activities followed		X						50%
		• # of contacts/meetings with clubs &	X							50%

Table 4-10–continued

Evaluation Questions	Sources of Evidence	Indicators	*S	A	C	R.V.	M	N	W	%
PRODUCT	**CLUB**	CLUB (N=7)								
	interviews	• support from community/school/ stakeholders	X	X	X	X		X	X	86%
What were the impacts of your activities?	records of donations									
	letters of	• change in attitudes		X	X		X	X	X	71%
	appreciation	• action taken to address local environmental issues or behaviors	X		X		X			43%
	awards/trophies									
	observation	• # of projects completed	X		X	X				43%
		• # of awards won			X					14%
	ACTION GROUP	**ACTION GROUP** (N=6)								
	reports	• support from community/stakeholders	X	X		X	X	X		83%
	observation	• action taken to address local environmental problems			X		X	X		50%
	photographs									
	interviews	• changes in attitudes toward conservation			X		X	X		50%
	records									
	REGIONAL OFFICE	**REGIONAL OFFICE** (N=2)								
		• action taken to address local environmental issues/behaviors								
	observation		X	X						100%
	survey	• positive support from community & stakeholders	X	X						100%
	interviews									
	record keeping	• change in attitudes toward conservation		X						50%
	minutes	• increased knowledge of participants		X						50%
	video									

(* S = Staff, A = Action Group, C = Coast, R.V. = Rift Valley, M = Meru, N = Nairobi, W = Western)

Table 4-11: Summary data and analysis of variance: Differences in pretest scores among training groups (N=120)

Training	N	Mean	SD		
1. Staff	10	24.10[a]	6.71		
2. Action group	17	21.29[a, b]	7.76		
3. Meru	11	19.00[a, b, c]	7.36		
4. Coast	29	17.31[b, c]	7.85		
5. Western	15	16.00[b, c]	8.25		
6. Rift Valley	19	15.68[c]	8.55		
7. Nairobi	19	14.32[c]	8.44		
Total	120	17.70	8.29		
Source	ss	df	ms	F	p
Between groups	990.3	6	165.1	2.59	0.022*
Within groups	7188.9	113	63.6		
Totals	8179.2	119			

[a-c] Significant differences reported at $p \leq 0.05$ level. Letters in common indicate non-significant differences among means according to results generated by the Least Significant Difference (LSD) test (SPSS 1997).

Table 4-12: Summary data and analysis of variance: Differences in pretest scores among staff, secondary school teachers, primary school teachers, and community members (N=120)

Training	N	Mean	SD		
1. Staff	10	24.10[a]	6.71		
2. Secondary teachers	67	18.07[b]	8.01		
3. Primary teachers	32	15.25[b]	8.37		
4. Community members	11	16.73[b]	8.63		
Total	120	17.70	8.29		
Source	ss	df	ms	F	p
Between groups	621.49	3	207.16	3.18	0.027*
Within groups	7557.71	116	65.15		
Totals	8179.20	119			

[a-b] Significant differences reported at $p \leq 0.05$ level. Letters in common indicate non-significant differences among means according to results generated by the Least Significant Difference (LSD) test (SPSS 1997).

Table 4-13: Summary data and analysis of variance: Score gains (posttest-pretest) of training groups (N=120)

Training	N	Mean	SD
1. Staff	10	18.40	4.65
2. Action group	17	21.82	7.95
3. Meru	11	21.36	7.42
4. Nairobi	19	24.37	9.15
5. Coast	29	22.34	7.49
6. Western	15	20.87	7.93
7. Rift Valley	19	19.84	6.56
Total	120	21.59	7.57

Source	ss	df	ms	F	p
Between groups	332.34	6	55.39	0.965	0.452
Within groups	6486.65	113	57.40		
Totals	6818.99	119			

Table 4-14: Summary data and analysis of variance: Score gains of staff, secondary school teachers, primary school teachers, and community members (N=120)

Training	N	Mean	SD
1. Staff	10	18.40	4.65
2. Secondary teachers	67	22.76	7.63
3. Primary teachers	32	21.09	7.89
4. Community members	11	18.82	7.52
Total	120	21.59	7.57

Source	ss	df	ms	F	p
Between groups	286.06	3	95.35	1.69	0.172
Within groups	6532.93	116	56.32		
Totals	6818.99	119			

Table 4-15: Factor analysis for posttest scores

	Factor 1	Factor 2	Factor 3	Factor 4
1. Why conduct evaluation?	0.0	-0.1	0.7*	0.3
2. When conduct evaluation?	0.1	0.2	0.7*	-0.2
3. Who should be involved?	0.2	0.0	0.2	0.5*
4. What evaluation questions?	0.2	0.3	-0.0	0.5*
5. What tools to collect data?	0.3	0.6*	0.3	0.1
6. What indicators?	0.4*	0.3	0.0	0.1
7. What stakeholders?	0.8*	-0.0	-0.1	0.1
8. Part vs trad. evaluation?	0.7*	0.1	0.2	0.0
9. Who present results to?	-0.1	-0.0	-0.1	0.8*
10. Format for results?	-0.1	0.8*	-0.0	-0.0

Table 4-16. Means and standard deviations for pretest questions, posttest questions, and score gains (posttest-pretest) (N=120)

Question	Possible Points	Pretest Mean	SD	Posttest Mean	SD	Mean Score Gain	SD
Factor 1							
6. What indicators?	7	0.94	2.06	6.35	1.66	5.41	2.40
7. What stakeholders?	7	2.34	2.68	6.22	1.44	3.86	2.97
8. Part vs trad. evaluation?	5	0.98	1.68	4.54	1.32	3.56	2.00
Factor 2							
5. What tools to collect data?	5	1.44	1.34	3.24	1.05	1.80	1.59
10. Format for results?	4	0.93	0.83	2.44	1.11	1.51	1.23
Factor 3							
1. Why conduct evaluation?	4	1.67	0.94	2.38	0.93	0.71	1.19
2. When conduct evaluation?	5	2.60	1.39	4.36	1.23	1.76	1.68
Factor 4							
3. Who should be involved?	5	2.88	1.61	4.24	1.51	1.36	1.98
4. What evaluation questions?	5	2.66	2.43	3.64	2.19	0.98	2.54
9. Who present results to?	3	1.21	0.89	1.87	0.93	0.65	0.98

Table 4-17: Number and percent participants with score gain > 0 (N=120)

Question	# participants score gain > 0	percent participants
Factor 1		
6. What indicators?	108	90%
7. What stakeholders?	102	85%
8. Part vs trad. evaluation?	99	83%
Factor 2		
5. What tools to collect data?	98	82%
10. Format for results?	96	80%
Factor 3		
1. Why conduct evaluation?	67	56%
2. When conduct evaluation?	74	62%
Factor 4		
3. Who should be involved?	82	68%
4. What evaluation questions?	35	29%
9. Who present results to?	65	54%

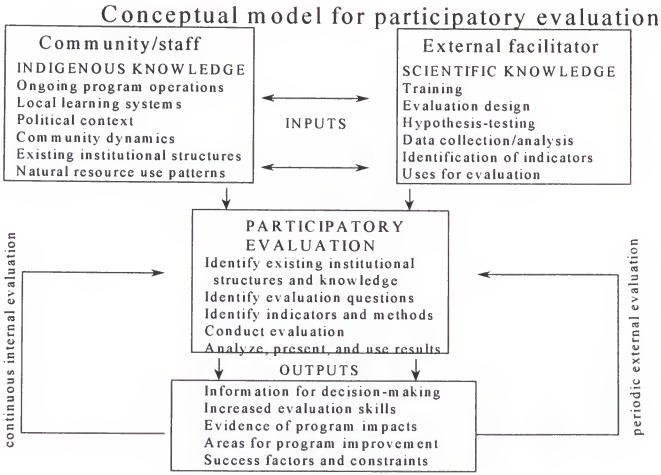


Figure 4-1. Conceptual model for participatory evaluation of conservation programs

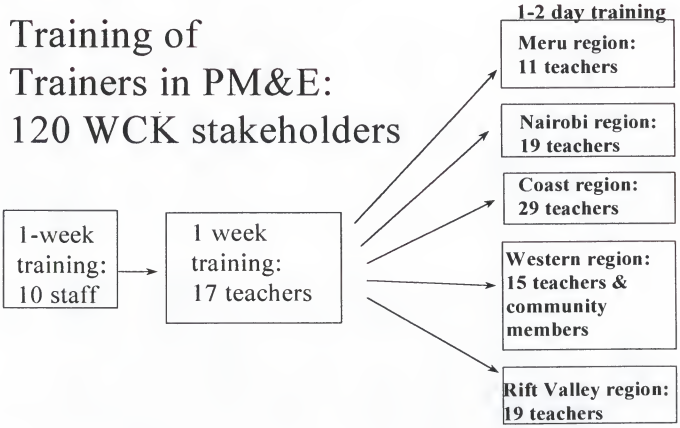


Figure 4-2. Training of trainers in participatory monitoring and evaluation

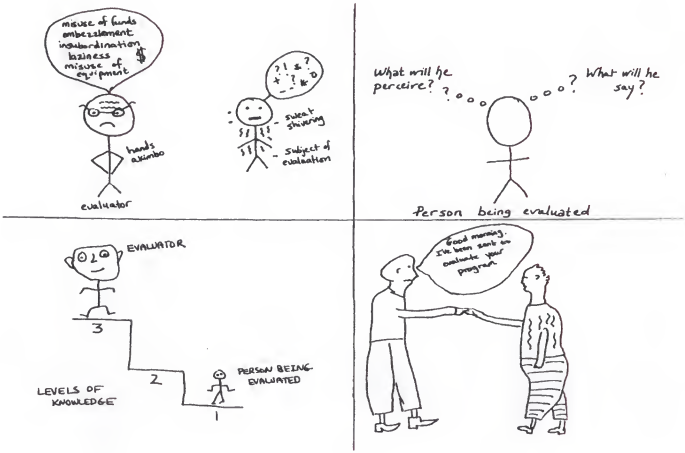


Figure 4-3. Prior conceptions of evaluation: Drawings by WCK staff

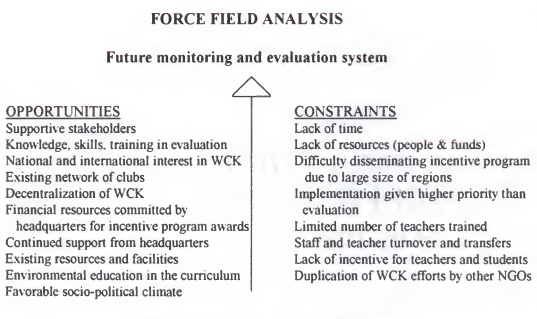

FORCE FIELD ANALYSIS
Future monitoring and evaluation system
OPPORTUNITIES
Supportive stakeholders
Knowledge, skills, training in evaluation
National and international interest in WCK
Existing network of clubs
Decentralization of WCK
Financial resources committed by headquarters for incentive program awards
Continued support from headquarters
Existing resources and facilities
Environmental education in the curriculum
Favorable socio-political climate
CONSTRAINTS
Lack of time
Lack of resources (people & funds)
Difficulty disseminating incentive program due to large size of regions
Implementation given higher priority than evaluation
Limited number of teachers trained
Staff and teacher turnover and transfers
Lack of incentive for teachers and students
Duplication of WCK efforts by other NGOs
Present monitoring and evaluation system

Figure 4-4. Force field analysis: Results from workshop

Distribution of clubs by regions: 1968-1997

(N=2,812)

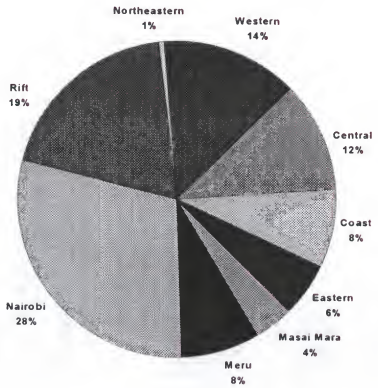


Figure 4-5. Outcomes of capacity building in information management: Distribution of clubs by region

Foundation for organizational learning from participatory evaluation
New Institutional Practice
Learning
Prior organizational knowledge and strategies

Figure 4-6. Building on existing institutional structures to promote organizational learning

CHAPTER 5
WHAT'S AT STAKE WHEN STAKEHOLDERS EVALUATE ENVIRONMENTAL EDUCATION PROGRAMS? APPLYING PARTICIPATORY EVALUATION TO THE WILDLIFE CLUBS OF KENYA

1974: *"The growth in environmental education programs brings with it an increasing need for evaluations."* (Bennett)

1982: *"Environmental education has been notoriously difficult to evaluate."* (O'Hearn)

1990: *"Lack of a suitable evaluation method seems to have contributed to the fact that few environmental education programs are evaluated."* (Thomas)

Introduction

The Need for Evaluation in Environmental Education

The need for evaluation of environmental education programs is a call repeated for the past three decades (Bennett 1974; Bennett 1988/89; Doran 1977; Nowak 1984; Thomas 1989/90; Norris and Jacobson 1998; Jacobson and McDuff 1997). A content analysis of reports from tropical conservation education programs revealed that less than 50 percent of the programs reported success in achieving program objectives or other positive outcomes (Norris and Jacobson 1998). Fewer than half of these conservation education programs used any type of evaluation to measure achievement of outcomes. However those programs implementing evaluations reported significantly higher rates of program success (Norris and Jacobson 1998).

The use of evaluation contributes to program success and provides tools for measuring impacts and improving environmental education programs. A recent content analysis of 15 conservation education programs revealed that programs conducting formative evaluation showed higher rates of overall success than programs that did not conduct evaluation during program development (Jacobson and McDuff 1997). In addition, programs that reported using more than one type of evaluation procedure reported greater success.

Evidence exists that environmental education programs can change the attitudes, knowledge, and behaviors of humans, resulting in conservation gains (GreenCom 1996a; GreenCom 1996b; International Union for Conservation of Nature 1993; Jacobson 1995a; Meadows, 1989; Pomerantz and Blanchard 1992; Saveland 1976). While the current literature reflects an increase in program evaluation in the field, environmental educators continue to decry the lack of priority given to evaluation of environmental education programs (Linke 1981; Norris and Jacobson 1998).

In their analysis of successful wildlife education programs, Pomerantz and Blanchard (1992) report that few of the case studies in their review included any type of evaluation. Weeks-Vagliani (1993) attempts to identify factors that could increase the probability of success in environmental education programs in developing countries. She concludes that training staff at all levels to evaluate the quality of the programs represents a critical component of successful programs. Likewise, the East African Regional Programme of the International Union for the Conservation of Nature for 1994-1996 set a priority on building the capacity to monitor and evaluate environmental education processes (IUCN 1994).

Without evaluation, ineffective environmental education programs may continue with serious consequences to the environments these programs seek to protect. One evaluation of an environmental education program in Senegal and the Gambia found that local residents were *more* confused regarding the conservation objectives of the government after implementation of educational activities (IIED 1994). A systematic evaluation was the only viable means of collecting such findings, and improving the program.

For programs that are effective, collecting baseline data and evaluating impacts provides an objective method of identifying factors leading to success (Jacobson and McDuff 1997). From the standpoint of accountability, such documentation is essential for expanding successful programs that result in real conservation gains. This need for evaluation is even more critical given the existing political climate, with recent criticism of environmental education (EE) in the popular press (e.g. Sanera 1995; Satchell 1996).

To be most effective, evaluation should be a continuous process, aimed at project improvement, as well as measurement of impacts (Jacobson 1987). When evaluation does occur, however, it is typically conducted by external evaluators for the purposes of accountability, and results are rarely used to improve programs (Bamberger 1991).

When evaluation does *not* occur, environmental educators may be tempted to make claims of program success based on anecdotes, rather than evidence, as the following example illustrates. "Despite the initial weaknesses, to which should be added the lack of provisions for a more comprehensive assessment of its penetration and effectiveness at the community level, [this EE program] has been making an undeniable contribution" (Filho, 1993, p. 209).

Reasons Behind the Lack of Evaluations

The dearth of monitoring and evaluation by EE programs may be due to a lack of knowledge and skills on the part of project staff; perception of evaluation as a complex process that requires the skills of an outside expert; lack of time by staff; priority given to program implementation over evaluation; lack of funding for evaluation; and lack of an appropriate model for evaluation that involves project stakeholders (McDuff and Jacobson 1998). Wood and Wood (1985) blamed a perceived lack of time, money, and expertise as factors responsible for the lack of formal program evaluation in environmental education, both in the U.S. and overseas.

Nowak (1984) emphasizes the lack of resources, funding and training in evaluation as a critical cause behind the low priority given to evaluation. Most programs cannot afford the time or staff to conduct comprehensive assessments, especially given educators' perception of evaluation as an activity conducted by outside experts. For programs dependent on outside financial support, the possibility of producing negative results also serves as a deterrent to conducting even small-scale evaluations (Thomas 1989/90). Deciding *what* to evaluate becomes problematic as well, given the lack of agreement on impact indicators for EE programs (O'Hearn 1982).

The absence of an evaluation model that fits the needs and characteristics of EE programs seems to have contributed to the inadequate emphasis on assessment (O'Hearn 1982; Thomas 1989/90). The lack of standard methodology for EE evaluation has created a dependence on experimental designs to show concrete learning gains from EE activities. As O'Hearn (1982) notes, however, the experimental design poses constraints to measuring outcomes in environmental education. In some cases, outcomes in EE may be

assessed more appropriately through participant reports, photographs, and drawings than from test scores.

Concerning indicators of success, O'Hearn (1982) notes that many EE programs have been dropped if posttest gains do not occur after one semester of instruction. He cites this inappropriate correlation between short-term student learning gains and program success as an encumbrance to building a relevant base of evaluation data for EE. The linkage between quantitative measurement and program success stems from the tradition of positivist research in EE evaluation. An understanding of the roots and trends of evaluation in EE is critical to understanding the need for a new participatory model of evaluation that incorporates stakeholders in the evaluation process.

Trends in Evaluation in Environmental Education

The first evaluation models for EE stemmed from the influence of Tyler (1950) and behaviorism in educational evaluation. This early models emphasized measurement of behavioral objectives and reflected the influence of the scientific, positivist paradigm (e.g. Bennett 1974; National Conference on Environmental Education 1968). Dissatisfaction with experimental design and behaviorism resulted in alternative assessment strategies in the EE literature, reflecting naturalistic and responsive evaluation models (e.g. Guba and Lincoln 1983; Stake 1983). Evaluation models such as Thomas's (1989/90) case study method, Nowak's (1984) direct evaluation, and Jacobson's (1991) P-P-P- model represented new strategies for evaluating EE programs.

Concomitantly, environmental educators began to highlight the importance of incorporating constructivist and interpretive paradigms into EE evaluation and research, as opposed to relying on strict behaviorist models (Cantrell 1993; Hart 1993; Robottom

1985; Robottom and Hart 1993; Wals 1993). Currently, researchers debate the merit of positivist and constructivist models, rather than moving toward an evaluation model that integrates *participation* of key project stakeholders and allows context to guide methodology. A movement toward participatory evaluation is critical for the field of EE to address the dearth of evaluation data and move beyond semantics to serious implementation of a relevant evaluation model.

Participatory evaluations are beginning to be used in community development, health, and sustainable agriculture programs in Africa, Asia, and Latin America (African Development Foundation 1995; Institute of Development Studies 1997; International Workshop on PM&E 1997). However, participatory evaluation has not been applied to environmental education programs.

Participatory Evaluation for Environmental Education

Participatory evaluation represents an innovative and pragmatic approach for implementing systematic program monitoring as the methods involve collaboration and training of local staff and other stakeholders in problem identification, evaluation design, data collection, analysis, and use of results. From a cost-benefit perspective, training staff to collect, analyze, interpret and apply evaluation findings represents the most efficient means of incorporating evaluation into project activities. The advantages of participatory evaluation include increased validity and utilization of results, improved communication between funding agencies and local partners, enhanced local capacity for decision-making, and cost-effective means of program monitoring (Bryk 1983; Feuerstein 1986; Greene 1987b; Jackson and Kassam 1998; Johnson 1995; Narayn 1993; Pfohl 1986; Rugh 1994; Weiss 1983).

In conventional evaluation, an outside evaluator assesses the impacts and effectiveness of a program and reports results to project administrators or donors. With participatory evaluation, project staff are involved in the design and implementation of the evaluation. Research in the evaluation literature reflects a direct correlation between involvement of stakeholders and utilization of results (Chelimsky 1987).

This study applied participatory evaluation to the largest grassroots environmental education program for youth in Africa, the Wildlife Clubs of Kenya (WCK). Begun in 1968, WCK was started by Kenyan students who wanted the chance to visit their own national parks and learn about wildlife and conservation. Since its inception, WCK has become the primary environmental education organization for youth in Kenya. In addition, WCK serves as a model for other wildlife and environmental club movements throughout Africa.

With a national headquarters in Nairobi, the organization has clubs in nine regions throughout Kenya (Figure 5-1). Elected groups of teachers called Action Groups coordinate activities in each region, with the help of four regional offices. At the school level, wildlife clubs are run by a volunteer teacher and student members. Each wildlife club is autonomous in terms of leading its own activities, but the national and regional offices organize activities such as environmental rallies and art and essay competitions for all clubs. WCK projects are supported by international and national donors, the government, membership fees, and an endowment fund created in 1993.

Despite a 30-year history, Wildlife Clubs of Kenya had not conducted a systematic evaluation of its overall impacts or effectiveness. The only evaluations that had been

implemented at WCK were external project evaluations by donors that consisted of periodic site visits for the purposes of accountability.

The need for evaluation was recognized by WCK administration in their 1990 strategic plan. It called for the development of monitoring and evaluation guidelines for all major programs (WCK 1990). However such an evaluation or guidelines had not been implemented due to perceived and real constraints such as lack of resources, perception of evaluation as the realm of outside experts, and lack of experience in evaluation.

This study first involved staff, Action Groups, and teachers in the identification of stakeholders for WCK and the development of critical evaluation questions. Second, the study used input from four key stakeholder groups--teachers, staff, students, and representatives from conservation, donors, and the government--to provide feedback on programming, constraints, impacts, recommendations, and benefits of the Wildlife Clubs of Kenya.

Methods

Phase 1: Who Participates in Participatory Evaluation?

Recent advances in natural resource management programs have focused on involving stakeholders and local communities in the planning and implementation of projects (BSP 1996; GreenCOM 1996b; IIED 1994; Rocheleau 1994; Stout et al. 1992; Wells and Brandon 1992; Western and Wright 1994.) Indeed, local participation has been linked to project success, as reflected in a content analysis of 102 USAID programs that found a significant correlation between degree of participation in projects and overall project success (Hewavitharana 1994).

Stakeholders include those who affect or are affected by the policies, decisions, and actions of a system (Grimble and Chan 1995). Stakeholders can be institutions, individuals, or social groups. A key question to address in participatory evaluation is determining which stakeholders will participate in evaluating the EE program.

The purpose of the first phase of this study was to identify these primary stakeholders from the perception of education staff, Action Group committees, and local teachers. These groups were chosen to conduct stakeholder analyses as they represented three key levels of the organization: national, regional, and local levels.

Stakeholder analysis is a procedure for gaining an understanding of a system by identifying key actors or stakeholders in the system (Grimble and Chan 1995). Stakeholder analysis has been shown to be effective in increasing the use of participatory methods for data collection and project management for natural resource management programs (Ford et al. 1996; Grimble and Chan 1995).

Two types of stakeholder analyses were conducted: (1) institutional diagrams of WCK stakeholders and (2) lists of WCK stakeholders. Institutional diagrams provide a useful tool for analyzing the spatial relationships between stakeholders and their relative importance (Slocum et al. 1995). Generating lists of stakeholders represents a quick, efficient method of assessing the primary stakeholders of an organization. Figure 5-2 depicts the use of these methods to answer the question: who participates in participatory evaluation?

In small groups, participants in the institutional diagrams were asked to draw circles that represent key stakeholders on pieces of flipchart paper. Overlap between circles represents interactions between stakeholder groups, and the largest circle depicts

the most important stakeholder in the system. The advantage of diagramming for stakeholder analysis is that the tool provides both depth and breath of data regarding the institution. The process requires at least three hours to conduct the exercise and discuss the results.

Due to the time required, stakeholder analyses using diagrams were conducted with three groups attending two to five-day trainings on participatory evaluation: (1) 10 WCK education staff from the national headquarters and four regional offices; (2) 17 teachers from Action Group committees across Kenya; and (3) 6 teachers from the Western region who lead wildlife clubs at the school level. To facilitate input and discussion, the exercises were conducted in small groups of approximately five participants. Thus, the education staff conducted a total of 2 analyses; the action group committees conducted 3 analyses, and the local teachers conducted one analysis.

The second type of stakeholder analysis involved generating a list of WCK stakeholders. These exercises were conducted at the local level with a total of 78 participating teachers in one-day workshops from four regions in Kenya: Meru region (11 teachers); Nairobi region (19 teachers); Coast region (29 teachers); and Rift Valley region (19 teachers).

For this analysis, the WCK stakeholders were listed on flipchart paper in a large group discussion. Participants were asked to generate a list of the most to the least important stakeholders. The first stakeholder listed was given a rank of 1. Thus, a lower number indicates a stakeholder of greater importance.

In all analyses, the facilitator did not limit the number of stakeholders, as a greater number of stakeholders may reflect a higher degree of collaboration with stakeholder

groups in that region. With the two types of stakeholder analyses, a total of 111 staff and teachers contributed to identification of key stakeholders in WCK in Phase 1.

Identification of Key Evaluation Questions

To identify key evaluation questions, the 10 education staff and 17 action group committee representatives brainstormed evaluation questions for the participatory evaluation. This exercise was conducted during two different five-day workshops. The questions generated from these exercises were integrated with key questions pertinent to WCK administration and resulted in a final list of six key evaluation questions.

Phase 2: Implementing Participatory Evaluation of WCK

To collect data for the evaluation, written questionnaires and semi-structured interviews were conducted with individuals from four key stakeholder groups identified during Phase 1 of this study: (1) teachers, (2) WCK staff, (3) students, and (4) conservation organizations, donors, and government officials.

The interview consisted of 8 open-ended questions which were pilot tested with 3 WCK staff members who did not participate in the final interviews. The questionnaire consisted of 13 open-ended questions which were pilot tested with 5 teachers. The interviews were conducted with the following stakeholder groups: students (n=21); WCK staff (n=9); and individuals representing conservation organizations, donors, and the government (n=20).

Staff were selected from both national and regional offices to represent education staff, administrative staff, and support staff. Individuals from conservation and government were chosen who had prior involvement or knowledge of WCK. Students

were interviewed at various WCK activities from three different regions of Kenya: Nairobi, Coast, and Meru.

In order to reach teachers throughout Kenya, written questionnaires were chosen as the data collection tool. The questionnaires were distributed to education staff at the national and regional offices. When teachers visited the office to renew their membership, they were asked to complete a questionnaire. This method was chosen over mail surveys, given low response rates from mail surveys in prior studies at WCK. Seventy-seven teachers responded to the questionnaire from the following regions: Nairobi (n=14); Coast (n=30); Western (n=20); Rift Valley (n=5); Central (n=7) and Eastern (n=1). Northeastern, Meru, and Masaii Mara regions were not represented among respondents due to lack of a regional office and political instability. Thus, a total of 127 stakeholders provided feedback for the participatory evaluation of WCK in Phase 2 of this study (Figure 5-3). While the selection methods did not result in a random sample, the stakeholders represented the diversity of individuals involved in WCK programs. Given the difficulty of communications in Kenya, a random sample of stakeholders was not feasible.

Results

Phase 1: Who Participates in Participatory Evaluation? Institutional Diagrams of WCK

Stakeholder analyses were conducted by education staff, regional action group committees, and local teachers. A total of 6 institutional diagrams were drawn. Examples of diagrams from the national, regional, and local level are shown in Fig. 5-4a, 5-4b, and

5-4c. The key findings from these stakeholder analyses include a comparison of the size and centrality of stakeholders as depicted by the three organizational levels of WCK.

First, the largest and most central stakeholder as shown by the education staff is the WCK national headquarters, represented in the center of the diagram. In Figure 5-4b, the students are the largest stakeholder drawn by the action groups. The local group of teachers also showed the students as the most important stakeholder, while the WCK headquarters is a much smaller stakeholder (Figure 5-4c). Note in Figure 5-4c that the WCK headquarters is represented at a distance from the largest stakeholder of the club members, as opposed to its central location in the diagram drawn by education staff.

In their discussion of the stakeholder analyses, the Action Group members (Fig. 5-4b) noted that "WCK" in their diagram represented the *institution* of WCK. Interestingly, the staff from headquarters who were facilitating the session suggested they rename "WCK" as "WCK headquarters" to be consistent with the other drawings. However, the Action Group members did not perceive "WCK" as the headquarters, but as a broader institution.

Table 5-1 presents a summary of the stakeholders depicted in these institutional diagrams. The stakeholder analyses drawn by the two groups of education staff show consistency in their depiction of the institution, as both analyses reveal WCK headquarters or national staff as the largest stakeholder with the regional offices and clubs/students as the second largest stakeholder. Likewise, the three groups of action group representatives show similar consistency, with two of the three analyses depicting the students as the largest stakeholder.

Phase 1: Who Participates in Participatory Evaluation? Ranking of Stakeholder Lists

In four regions of Kenya, teachers who lead wildlife clubs at the local level generated lists of WCK stakeholders in order of importance. The results from these exercises are shown in Table 5-2. An average of 11.5 stakeholders were listed by region: Rift Valley region (12 stakeholders); Meru region (8 stakeholders); Nairobi region (11 stakeholders); and Coast region (15 stakeholders). A total of 24 different stakeholders were listed by all four regions. Two of the four regions listed students as the primary stakeholder, while the other two listed teachers.

As seen in the institutional diagrams, the teachers portrayed both students and teachers as the most important stakeholders, with WCK staff as a stakeholder of lower importance. However, similar stakeholders are depicted in the analyses conducted by all levels of WCK. Assessing similarities and differences in these stakeholder analyses represents a critical first step in designing a participatory evaluation.

This step allows integration of perspectives from multiple organizational levels into the evaluation. From these stakeholder analyses, four key stakeholder groups were chosen to provide feedback on WCK programs. These stakeholder groups included (1) teachers, (2) students, (3) WCK staff, and (4) representatives from conservation organizations, donors, and government.

Identification of Key Evaluation Questions

The 10 education staff and 17 Action Group committee members generated lists of potential evaluation questions, which were integrated with questions of importance to

WCK administration. The following six questions were chosen as key questions to focus the evaluation.

(1) Most effective WCK programs?
(2) Least effective WCK programs?
(3) Primary constraints faced by WCK?
(4) Recommendations for improving WCK?
(5) Primary impacts of WCK? and
(6) Benefits to students of WCK?

Participatory Evaluation of WCK

The four stakeholder groups--teachers (n=77), students (n=21), WCK staff (n=9), and conservation/donors/government (n=20)--responded to the six key evaluation questions through interviews and questionnaires. The following results from the participatory evaluation highlight both the number of stakeholders citing a specific response, as well as the similarities and differences in feedback across the four stakeholder groups. Note that respondents could give more than one answer to each question.

Most effective WCK programs

All four stakeholder groups responded that student trips to the national parks were the most effective WCK program (n=46, 36%). In an interview, James Mwenja, interpretation officer at Nairobi National Park recalls his first visit to the park. "As a WCK member in 1980, I first came to Nairobi National Park," he said. "It was my first time to visit a park, and it had a great impact on my choice of careers. I have no doubt that I'm one of those people influenced by WCK."

The perspectives from current students interviewed in this study echoes the importance of these experiences. "You usually just get to see these animals in books," said 16-year old Munaa Hemed Said. "But in the parks, you get to see them in person.

You feel like you're one grade ahead of someone who has only seen the animals in books. We carry wildlife guides to identify the different animals we see, and we learn all about their characteristics."

Thirty-one percent (n=40) of respondents cited tree planting as a most effective program with representation from the teacher and student stakeholder groups (Table 5-3). Teacher and student workshops, rallies, and seminars were noted as most effective by 17% (n=21) of respondents from all four stakeholder groups.

Other programs cited as most effective included: clean-ups; tree nurseries; mobile education unit; creating an interest in conservation; research on conservation issues; birdwatching; *Komba* magazine; lectures; and lobbying against poaching in the 1970s (Table 5-3).

Additional responses to this question are presented in the footnotes to Table 5-3. Responses were included in footnotes if listed by only one stakeholder group and/or representing <10% of that group.

Least effective WCK programs

When asked about the least effective WCK program, sixteen percent (n=20) of respondents from three stakeholder groups (students, staff, and conservation/govt) were either unsure or said that none of the programs had been ineffective (Table 5-4). Both teacher and student groups responded that regular field trips had been ineffective due to lack of funds (n=13, 10%). These same two stakeholder groups (n=10, 8%) noted that tree planting was least effective due to conditions that decreased the survival rate of trees, such as lack of follow-up or drought.

Other programs cited as least effective included: fish ponds; tree nursery; rearing animals; planning activities with other schools; failure to follow-up WCK members after school; *Komba* magazine/distribution of *Komba*; fundraising; monthly lectures; and mobile education unit due to large number of clubs (Table 5-4).

Constraints faced by WCK

Fifty-nine percent (n=75) of respondents from all four stakeholder groups noted lack of funds and resources as the primary constraint faced by WCK (Table 5-5). Staff member Jane Nguti noted the difficulty of operating educational programs with shortages of funds. "Outside donors are pulling out," she said. "The biggest donor we had has pulled out, and the government has cut back on their funding of WCK, so we really have to operate on a tight budget."

In addition, all four groups cited lack of time in school curriculum (n=22, 17%) and lack of communication between the WCK office and clubs (n=15, 12%) as constraints. Three stakeholder groups (teachers, students and staff) responded that lack of support from school administration was a constraint (n=14, 11%); as well as lack of transport (n=14, 11%).

Other constraints included lack of interest of club members; lack of support from community; lack of resource materials; repetition of same activities; low priority in WCK to human resource management; lack of accountability of some staff; lack of water for projects; and involvement in WCK ending after secondary school (Table 5-5).

Recommendations for improving WCK

Seventeen percent (n=22) of respondents representing teachers and students recommended visits to the clubs by WCK staff for motivation and follow-up (Table 5-6).

"The WCK staff need to visit all the registered schools to see if they are implementing activities or not," said Joseph Kimani, a WCK student volunteer. "There are schools that don't renew their membership, and we need to find out what the problem is. So there needs to be follow-up on these schools to motivate them."

Fourteen percent (n=18) of the stakeholders (teachers, students, and conservation/ govt) suggested organizing more teacher and student workshops. Both teachers and students noted the need to provide fundraising ideas to clubs (n=14, 11%). All four stakeholder groups recommended improved communication between WCK and the clubs in the regions (n=14, 9%). "Here at the WCK headquarters, we need to look at what is happening in the regions and not just rely on them to contact us or tell us what they have been doing," said staff member Elizabeth Kibugu. "There needs to be more communication between headquarters and the regions."

Other recommendations for improvement included: provide help and transport in organizing student trips; expand the mobile education unit; award prizes for outstanding clubs; create community awareness/involvement; improve public relations and publicity; follow-up students after secondary school; increase focus on rural clubs; improve physical facilities at headquarters; and adapt new activities for current needs (Table 5-6).

Primary impacts of WCK

All four stakeholder groups cited increased awareness and interest in conservation among students as a primary impact of WCK (n=55, 43%). As WCK member Margaret Kangori explained, "For me, I realized wildlife and the environment was more important than I once thought because of WCK. At first, I was drawn to WCK because of the trips. I thought that my part was just to look at wildlife on trips, not to be actively involved in

conservation. I thought that role was for people who work in Kenya Wildlife Service. But then, I realized that I can do something to help conservation and wildlife. Through WCK, I realized I could play a small but effective role."

Nineteen percent (n=24) of respondents (teachers, students) noted enhanced public and community participation in conservation as an impact. Nine percent (n=11) representing teachers, students, and conservation/government felt that increased number of trees from tree planting across the country was a primary impact of WCK activities (Table 5-7).

Concerning community participation, WCK member Catherine Chania explained how WCK activities have influenced the coastal communities in Kenya. "Here on the Coast, WCK has made people aware of their marine resources and why we should protect them," Chania said. "When WCK members have beach clean-ups, other people watch and ask what we are doing. They learn about why we are cleaning up the beaches."

Other impacts revealed by this study included: WCK as a model for other wildlife clubs and youth movements; not sure; bringing students into the national parks; majority of conservation professionals in Kenya were WCK members; cleaner environment from clean-ups; bringing students from across Kenya together; lobbying force against poaching in the 1970s; making conservation a Kenyan issue, not a colonial issue; large number of Kenyans that were WCK members; enhanced environmentally responsible behavior of students; and creating a network of clubs in Kenya (Table 5-7).

Individuals interviewed from conservation organizations who had been involved in WCK since the 1970s noted the impact of WCK on conservation in Kenya. "In the 1970s, people in Kenya did not know what conservation was about at that time," said James

Maikweki, curator of the National Museums of Kenya. "They thought conservation was a white man's idea. The Wildlife Clubs of Kenya made conservation belong to Kenyans."

Other individuals in conservation echoed the impact of WCK on influencing Kenyans in the field of conservation. "Many of the young men and women I met while I was director of Kenya Wildlife Service were once members of WCK," explained Richard Leakey. "I was always surprised at how many of our staff had chosen KWS (Kenya Wildlife Service) as a career because of their involvement with WCK."

Benefits to students from WCK

As seen in Table 5-8, all four stakeholder groups cited the following benefits to students: exposure, knowledge and skills in conservation (n=75, 59%); trips to the parks/free entry to parks (n=52, 41%); interaction with other students (n=18, 14%); and participation in rallies, seminars, and competitions (n=9, 7%).

Other benefits to students included experience for a conservation career; awards and prizes; films and resources; environmentally responsible behavior promoted from activities; *Komba* magazine; enhanced academic performance; and profits from the sale of tree seedlings (Table 5-8).

Discussion

Who Participates in Participatory Evaluation and Why?

The majority of EE programs do not conduct systematic evaluations of their impacts or effectiveness. Without such data, we cannot hope to build on current success stories, or improve programs that are not working. Without evaluation, environmental educators operate in a programmatic vacuum, isolated from concrete data that can guide programming decisions. In such a vacuum, decisions about EE programs are based at

best on anecdotes or intuition. At worst, these decisions are made by the critics of EE who hope to dismantle programs due to the lack of evidence of their achievements.

Participatory evaluation provides a model that meets the needs of EE, in terms of cost-effectiveness and relevance. In the case of the Wildlife Clubs of Kenya, participatory evaluation demanded an investment of time and training, but the outputs resulted in concrete evidence of impacts and direction for improvement. In addition, organizational learning occurred both at the individual and institutional level.

Individuals at different levels of an EE program view the organization from different perspectives. The stakeholder analyses provided a tool to reveal both similarities and differences among the perceptions of an organization held by staff, Action Group members, and teachers. Without the stakeholder analyses, these perceptual differences would not be documented or incorporated into the evaluation design.

This study shows the importance of involving stakeholders from different levels of the EE program in the *design* phase of the evaluation. For example, the education staff perceived the national headquarters as the primary WCK stakeholder, while the teachers and action group representatives viewed students as the most important stakeholder. In this study, perception of the organization depended on one's geographical and institutional "distance" from other stakeholders. Local teachers in the Western region of Kenya have little interaction with the national headquarters in Nairobi. Thus, in their institutional diagram, they placed the headquarters at a distance from the students. These teachers interact primarily with the WCK regional office, students, and local stakeholders in conservation such as government officials.

Designing an evaluation at headquarters without integrating the input of regional and local teachers would have resulted in an evaluation that did not meet the needs of the entire organization. The staff may have placed "headquarters staff" as a primary stakeholder group, which would not have represented the perspectives at the local level. Given the results from the stakeholder analysis, the evaluation collected data from staff at both national and regional levels, as well as students, teachers, and individuals from conservation organizations and the government.

While the stakeholder analyses revealed perceptual differences, the diagrams and rankings also showed similarities that allowed prioritizing of four key stakeholder groups whose feedback was essential for the participatory evaluation. Too often in evaluation, the evaluators *collect* data from different levels of an organization. But they do not involve stakeholders from these different organizational levels to collaborate on the design of the evaluation. Such input using tools such as stakeholder analysis is a critical step toward participatory evaluation. EE organizations should incorporate these tools to guide evaluation design and address the question of who should participate in participatory evaluations.

Integrating input from staff and teachers into identification of key evaluation questions also resulted in questions that fit the context of WCK. Collecting evaluation data on questions relevant to the needs of primary stakeholders increases the probability that the results will be used within the organization (Chelimsky 1987). With the traditional evaluations conducted at WCK by donors, the evaluator arrived at the project site with evaluation questions in place. In most cases, project staff in conventional evaluations by donors may not be informed of the evaluation questions until the final

report arrives from the donor. These evaluation questions are often based on prespecified project objectives and accountability, rather than changing contexts and current needs. Results are seldom used for program improvement.

Assessments of WCK Revealed from Participatory Evaluation

Collecting evaluation data from different stakeholder groups provided insight into both similar and different assessments of program impacts, strengths, weaknesses, and recommendations for improvement. The results from the participatory evaluation with the four key stakeholder groups allowed WCK to view the organization's past, present, and future from the eyes of staff, teachers, students, and representatives from conservation/donors/government. This feedback provided both breadth and depth in data collection for the evaluation.

Participatory evaluation should be used to assess EE programs from the perspective of key stakeholder groups. Collecting and documenting feedback from different stakeholder groups can allow program planners and staff to prioritize areas for improvement, identify partnerships, and publicize past impacts and future programs. Designing an evaluation that only collects data from one stakeholder group, such as students, may reveal a one-sided perspective of the organization.

Most and least effective WCK programs

This participatory evaluation revealed that all four stakeholder groups agreed that trips to the national park are one of the most effective WCK programs. As three responses to this question were cited as effective by more than three stakeholder groups, the consistency reflects the need to continue programs noted as effective, such as trips, student and teacher workshops, rallies, and seminars.

The diversity of programs cited as least effective programs resulted from stakeholders' specific experience with WCK, whether at the club level, staff level, or through conservation organizations and government. For example, 2% (n=3) of respondents from the conservation and government group felt that failure to follow-up WCK members after secondary school was ineffective. This response stems from their perspective in the conservation arena in Kenya. At the club level, teachers and students (10%, n=13) cited inability to take field trips due to lack of funds as least effective.

Constraints

Lack of funds and resources was the overwhelming response given as a constraint by 59% (n=75) of respondents from all four stakeholder groups. In 1993, WCK began an endowment fund as an attempt by headquarters to achieve financial sustainability of the organization. However, clubs lack funds and resources to conduct activities at the local level. In addition, donors and the government have decreased contributions to WCK due to national financial difficulties and competing needs. These financial constraints affect the day-to-day operations of the organization, as well as the activities of students at the club level.

Other constraints cited by all four stakeholder groups included lack of time in the school curriculum and lack of communication between WCK offices and the clubs. Five responses in this category were listed by at least three groups. Again, the similarity in responses shows consistency in constraints across stakeholder groups.

Recommendations for improvement

This issue solicited the greatest diversity of responses from participants in the evaluation. Seventeen percent noted the need to increase visits to clubs by WCK staff,

and all four stakeholder groups suggested increased communication between WCK offices and the clubs.

The results reflect the need for communication and the motivation provided by staff visits. A visit to a rural school by the WCK Mobile Education Unit provides evidence of this motivation, as the entire school often rushes to greet the WCK vehicle. The constraint to implementing this recommendation lies in lack of staff and transport. As WCK decentralizes, two other regions have received their own mobile education units to facilitate visits to schools in these regions. The increasing number of clubs makes the issue of staff visits and communication a critical albeit problematic area for WCK.

The issue of communication between WCK headquarters and the clubs is an essential factor within WCK. Often the principal link between WCK and an individual club is the *Komba* magazine and correspondence received from headquarters. Many schools in the rural areas do not have telephones, so mail is the primary contact with the clubs. If this communication is not received, clubs often lose motivation for continuing activities. As a result of this evaluation, WCK staff at headquarters addressed this issue by updating and computerizing the membership list and mailing list. This improvement is hoped to address some of the past weaknesses in communication.

Impacts of WCK and benefits to students

Increased awareness and interest in conservation among students was cited by all four stakeholder groups. Three responses in this category were noted by ≥ 3 groups. The data collected during the evaluation from both adults and students attested to both the short-term and long-term effects of increased interest in conservation from WCK. Among

adults, this early exposure to conservation allowed them to continue their interest in conservation after WCK.

"If it wasn't for wildlife clubs, I probably would never have left my district as a student," said Alice Mwangi, WCK leader and chemistry teacher. "It was my interest in wildlife that took me outside my home. . . . Now that I'm a chemistry teacher, my club has started a tree nursery, and one year, we had 2000 seedlings. Now I'm taking my own students on trips to the parks as well." Of the teachers who lead wildlife clubs, 71% (n=55) of respondents in this study had been wildlife club members as students.

For current students, the short-term effects of WCK can influence friends and family members. "My family actually complains about me because I'm always after them to pick up rubbish," explained Doreen Nyange from Mama Ngina Secondary School. "But my little sister, I have to teach her. How else will she learn?"

Using results for program improvement

The consistency of both benefits and impacts noted by all four stakeholder groups emphasizes the importance of building on past success of WCK and promoting improvement for the future. The diversity of responses for recommendations for improvement means that WCK must prioritize key areas for improvement and increase public relations to inform stakeholders of its current initiatives and mandates.

As noted in this study, communication is a key to building on past success and guiding future improvements. To use these results efficiently, WCK must focus on two or three areas for improvement that can benefit the organization overall. For example, the staff at headquarters has begun streamlining its membership and mailing database to improve communication. With input from all staff, WCK headquarters can

focus on the primary areas for improvement and initiate concrete measures to implement these recommendations.

Effective public relations about past impacts and current directions for improvement can enhance the image of WCK in the public eye, and inform the public of its current role. As revealed by this study, different stakeholders have different opinions about the role of WCK. Conservationists may feel WCK should perform one role, while teachers have other priorities. Active communications may also open doors for partnerships with WCK among other conservation organizations in Kenya to address multiple needs.

For example, representatives from conservation and government felt that WCK's least effective program was follow-up of WCK members after secondary school. Four percent recommended following students after secondary school to involve them in conservation. Upon reading these results, one staff member noted that WCK would lose its focus if it started targeting past members after school. Thus, a partnership with another conservation organization such as East African Wildlife Society would tap this target audience as adults. Currently, some conservation organizations in Kenya suffer from a lack of Kenyan members, and could use the strength of WCK as a resource to build their own membership and enhance conservation in Kenya.

Such a participatory evaluation allows EE programs to view their organization from the eyes of key stakeholders. In addition, involving stakeholders from the beginning ensures a *relevant* evaluation that meets the needs of the EE program. Upon completion of the evaluation, the key to using the results successfully lies in involving those who helped to design the evaluation in implementing the results.

Relevance of Participatory Evaluation for Environmental Education

The role of participants and the evaluator in participatory evaluation

Participatory evaluation places the evaluator in the non-traditional role of facilitator and negotiator, and allows project stakeholders to become the key actors in the evaluation. This reality is particularly relevant to the field of EE, where programs generally lack the financial resources to hire external evaluators to conduct comprehensive program evaluation. In addition, participatory evaluation builds the capacity of staff to design, implement, and use their evaluation results.

Participation of stakeholders in all phases of program evaluation increases the likelihood that evaluation results will be used (Chelimsky 1987). Participatory evaluation provides a pragmatic model as project staff are involved in all phases of evaluation, from design, implementation, and use of evaluation results.

With the involvement of key stakeholders, tasks such as identification of evaluation questions becomes a process of negotiation. In the case of WCK, questions generated by teachers and staff were integrated with questions of importance to administration. This negotiation process means that the needs of donors or administrators can be met in an evaluation, while still considering the information needs of other key stakeholders. Thus, the outside evaluator becomes a facilitator and negotiator of the process.

An evaluation model that allows context to guide methodology

Participatory evaluation allows the context of the EE program to guide both the evaluation questions and methodology, allowing for creative and relevant approaches to evaluation. Such strategies are needed given the field of EE's dependence on methods such as pretests and posttests for showing achievement of program objectives.

Through participatory evaluation, the field of EE can move beyond the behaviorism versus constructivism debate in assessment to *participation* which allows for integration of tools relevant to gathering data on pertinent evaluation questions. Clearly, there is an important place for tools such as pretests and posttests in evaluation of EE programs. But we can expand our repertoire of methods with the participation of project staff and other stakeholders. Once key impacts or benefits are identified, participants can explore results further through quantitative or qualitative data collection techniques.

Inputs and outputs for participatory evaluation of EE programs

Participatory evaluation requires an investment of time and capacity-building, but the outputs provide evidence of concrete impacts and direction for program improvement. In the case of the Wildlife Clubs of Kenya, both staff and teachers invested time in training for participatory evaluation to build skills in identifying evaluation questions, stakeholders, data collection tools, and using results. Before the trainings, staff believed evaluation was important, but were unsure how to design an evaluation.

Upon reviewing the results from this evaluation, one staff member stated, "This is the first time that we've had concrete data to show donors what people think about our programs." The outputs could be used by administration to improve programs, but also to show evidence of impacts cited by a variety of stakeholders. The results included hard data that made a statement to donors, such as the fact that 71% of all WCK teachers responding to the questionnaires had been WCK club participants as students.

Participatory evaluation will require prioritization within EE in terms of training, funding, and staff responsibility. Donors of EE projects must receive education on the importance of funding both evaluation of projects, as well as implementation. In addition,

trainings for staff on evaluation methods are critical to ensure participatory evaluation is integrated into on-going program operations.

Within WCK, the process of participatory evaluation promoted organizational learning through discussion, sharing, conflict, and consensus. Evaluation is innately a political process, which exposes both strengths and weaknesses within an organization. But when these results are discussed within the program, the evaluation process promotes exchange of ideas that improves EE programs.

Through the use of participatory evaluation at WCK, staff have now designed evaluations of their individual EE projects, and are collecting data to document impacts. These project evaluations include the use of tools such as pretests and posttests, but also incorporate student artwork, interviews, and focus groups. The organization has developed a program called the WCK Incentive Program by which individual wildlife clubs, Action Groups, and regional offices can monitor and evaluate their own work. This learning process did not result from the end product of an external evaluation, but rather from a *process* of participatory evaluation.

The EE community should network to share lessons learned, methods, indicators, constraints, and opportunities regarding attempts to integrate participatory evaluation into EE. Conferences and networking sessions must seize the opportunity to discuss strategies and trends in evaluation for the field. Only through sharing lessons learned of both opportunities and constraints in evaluation can we build a shared knowledge of integrating evaluation into our EE programs.

The involvement of stakeholders in evaluation represents a powerful strategy for EE that will affect enhanced validity and use of results, capacity building of staff, and

systematic implementation of evaluations in EE. We must take evaluation seriously as a priority in order to legitimize the field of EE in the current political climate. From the 1970s through the current decade, the call for systematic evaluation resounds from the literature. The need for an appropriate model exists with participatory evaluation as an innovative and viable solution.

Table 5-1. Comparison of stakeholder analyses from institutional diagrams

Organizational level and # of analyses	Largest stakeholder	Second largest stakeholder	Smallest stakeholder
Education staff			
Analysis 1	WCK headquarters	WCK regional staff, students	Associate & corporate members, Friends of WCK
Analysis 2	WCK national staff	WCK regional office, students	Associate & corporate members, govt., the public
Action group committee			
Analysis 1	Students	WCK (institution)	Trustees, associate members, govt
Analysis 2	WCK (institution)	Students, teachers, WCK staff	Associate & corporate members, community
Analysis 3	Students	Teachers	Associate & corporate members, Friends of WCK, Parents, other NGOs
Local teachers			
Analysis 1	Students	Community, school, action group	WCK national office, Ministry of Environment
Total # of stakeholder analyses conducted 6			

Table 5-2. Comparison of WCK stakeholders listed by teachers from 4 regions

Stakeholder (N=24)	Rift Valley	Meru	Nairobi	Coast
Teachers	1	2	1	2
Students	2	1	2	1
WCK staff	6	0	3	7
Donors	5	4	5	5
Community	3	3	10	4
Kenya Wildlife Service	11	0	4	6
Government	12	5	7	13
Conservationists	8	8	0	0
School administration	10	0	8	3
NGOs	0	6	0	10
Corporate members	0	0	9	14
Tourists	4	0	0	0
WCK trustees	0	0	6	16
Church	0	7	0	0
Industrialists	7	0	0	0
School community	0	0	0	8
Parents	9	0	0	0
Forest department	0	0	0	9
Fisheries department	0	0	0	11
The environment	0	0	11	0
Associate members	0	0	0	12
Local authorities	0	0	0	15
Community development authorityy	0	0	0	17
KEMFRT (conservation NGO)	0	0	0	18
Total number of stakeholders	**12**	**8**	**11**	**15**

(Ranking of stakeholders: 1 = most important stakeholder)

Table 5-3. Most effective WCK programs

CATEGORY	Teachers N=77	Students N=21	Staff N=9	Conservation/Govt N=20	TOTAL N=127
Most effective programs					
Student trips to national parks	24	10	6	6	N=46 (36%)
Tree planting	35	5			N=40 (31%)
Teacher and student workshops, rallies and seminars	11	4	3	3	N=21 (17%)
Clean-ups	14				N=14 (11%)
Tree nurseries	9				N= 9 (7%)
Mobile education unit	1		3	4	N= 8 (6%)
Creating interest in conservation through club activities				7	N= 7 (6%)
Research/discussion on conservation issues	3	4			N= 7 (6%)
Birdwatching/birdfeeding	6				N= 6 (5%)
Komba magazine			1	4	N= 5 (4%)
Lectures	5				N= 5 (4%)
Lobbying against poaching in 1970s				3	N= 3 (2%)

Note:
Conservation govt: competitions (1); addressing regional conservation issues (1);
Staff: Young Women & Environment Program (1); Kakamega Forest Program (1); Holland-Youth Exchange Program (1);
Students: symposia between schools (1); educating people not to dump garbage (1);
Teachers: rabbit-keeping (4); tree identification (4); beekeeping (3); raising community awareness (3); composing songs/poems/art (2); nature trail (2); gardening (1); fish pond (1); none (1).

Table 5-4. Least effective WCK programs

CATEGORY	Teachers N=77	Students N=21	Staff N=9	Conservation/Govt N=20	TOTAL N=127
Least effective programs					
None, not sure		9	5	6	N=20 (16%)
Regular field trips due to lack of funds	12	1			N=13 (10%)
Tree planting (trees died)	8	2			N=10 (8%)
Fish ponds	10				N=10 (8%)
Tree nursery	8				N= 8 (6%)
Rearing animals	5	2			N= 7 (6%)
Planning activities with other schools/clubs	4	1			N= 5 (4%)
Failure to follow-up CK members after secondary school				3	N= 3 (2%)
Komba/distribution of Komba			1	2	N= 3 (2%)
Fundraising		1	2		N= 3 (2%)
Monthly lectures		1	1		N= 2 (2%)
Mobile education unit (due to large number of clubs)				2	N= 2 (2%)

Note:
Conservation/govt: publication of resource materials (1); former radio program (1); use of mass media (1); exchange of information with different regions (1); building partnerships in corporate sector (1); WCK at university level (1); reaching the large number of clubs (1); Holland-Youth exchange program (1)

Staff: 1-day student seminars (1); lack of student seminars (1); maintenance of facilities (1); monthly lectures (1); distribution of Komba (1); inactive offices in Rift Valley and Kitui region (1)

Table 5-4--continued

Students: digging garbage pits (1); inviting other schools to debate (1); club inactivity after leaders leave (1); competing organizations with similar activities to WCK (1); monthly lectures (1)

Teachers: gardening (4); birdwatching/birdfeeding (4); nature trail (3); participating in activities with other schools (3); public education (3); clean-ups (3); drawing wildlife (2); conservation of endangered species (2); interschool rally (1); fieldtrip for non-WCK members (1); club museum (1); butterfly rearing (1); research projects (1); any activity requiring money (1); protecting marine life (1); lectures (1); beekeeping (1); competitions (1); club magazine (1); tree identification (1); aquarium (1)

Table 5-5. Constraints faced by WCK

CATEGORY	Teachers N=77	Students N=21	Staff N=9	Conservation/Govt N=20	TOTAL N=127
Constraints					
Lack of funds/resources	44	12	8	11	N=75 (59%)
Lack of time in school curriculum	16	2	2	2	N=22 (17%)
Lack of communication & follow-up b/t WCK and clubs	4	1	3	7	N=15 (12%)
Lack of support from school administration	11	2	1		N=14 (11%)
Lack of transport	8	4	2		N=14 (11%)
Lack of interest of club members	6	4			N=10 (8%)
Lack of support from community	6				N= 6 (5%)
Lack of resource materials	5				N= 5 (4%)
Repetition of same activities from 1970s				3	N= 3 (2%)
Low priority in WCK to human resource management				3	N= 3 (2%)
Lack of accountability for some staff			2	1	N= 3 (2%)
Lack of water for projects	2	1			N= 3 (2%)
Involvement in WCK ends after secondary school		1		1	N= 2 (2%)
Lack of public relations about WCK			1	1	N= 2 (2%)
Shortage of personnel in some regions			1	1	N= 2 (2%)

Note:
Conservation/govt: WCK led by volunteers at grassroots (1); low salaries of staff (1); competition from other conservation organizations (1); need for creating capacity for teachers to address local conservation issues (1); lack of networking with other conservation organizations (1); lack of documentation of # of active clubs (1); composition of governing council by international conservation bodies (1)

Table 5-5--continued

Staff: Lack of transition when active patrons leave (1); need to support staff decisions & ideas (1)

Students: dependence of club on active officials (1); inactive patrons (1); not sure (1); negative attitudes of other students in school toward conservation (1);

Teachers: Destruction of projects by livestock (2); lack of knowledge of wildlife for projects (2); negative attitudes toward projects like clean-ups (1); poachers terrorized me (1); traditional beliefs (1); lack of motivation from WCK (1); members humiliated when collecting garbage (1); climate/weather (1);

Table 5-6. Recommendations for improving WCK

CATEGORY	Teachers N=77	Students N=21	taff N=9	Conservation/Govt N=20	TOTAL N=127
Recommendations					
Visits to clubs by WCK for motivation & follow-up	17	5			N=22 (17%)
Organize more teacher/student workshops	16		1	1	N=18 (14%)
Provide fundraising ideas to clubs	13	1			N=14 (11%)
Improve communication b/t WCK & clubs	4	2	3	3	N=12 (9%)
Provide help/transport in organizing student trips	10				N=10 (8%)
Expand mobile education units	6			1	N= 7 (6%)
Award prizes for outstanding clubs	6			1	N= 7 (6%)
Create community awareness/involvement	3	1		2	N= 6 (5%)
Improve public relations/publicity		1	1	3	N= 5 (4%)
Follow-up students after secondary school				5	N= 5 (4%)
Increase focus on rural clubs	1	2	1		N= 4 (3%)
Improve physical facilities at headquarters			3	1	N= 4 (3%)
Adapt new activities for current needs				4	N= 4 (3%)
Appreciate staff efforts & ideas			3		N= 3 (2%)
Improve monitoring & evaluation of clubs	2			1	N= 3 (2%)
Lobby for conservation in curriculum	2			1	N= 3 (2%)
Improve communication b/t staff			3		N= 3 (2%)
Increase number of education staff	1			1	N= 3 (2%)
Increase staff salaries			1	1	N= 2 (2%)
Strengthen 2 weak regional offices			1	1	N= 2 (2%)
Open more regional offices	1			1	N= 2 (2%)
Have regional network of students		1		1	N= 2 (2%)

Table 5-6--continued

Note:
Conservation/govt: Train teachers before they become patrons (2); focus on local environmental issues (2); higher priority to human resource management (1);
less reliance on donors (1); focus on critical thinking skills for EE (1); move to conservation action (1); maintain accountability in regions (1); publish Komba regularly (1); follow-up students after park visits (1); develop strategic plan (1); generate own funds (1); train staff on new technologies (1);
ensure youth leaders get chance to visit parks (1); not sure (1)

Staff: Fill vacant staff positions ASAP (1); equalize distribution of funds to action groups (1); support incentive program (1); hire another driver (1); focus on education programs (1); practice environmentally responsible actions, like recycling, in office (1)

Students: Government should support clubs (1); clubs should be more active (1); not sure (1); have exchange programs (1); organize more activities for clubs (1); have more clubs at college level (1); have activities after secondary school (1); try to clean-up more of the city (1); increase interest in conservation in other students in school (1); more members should join WCK (1); increase number of animals in Kenya (1);

Teachers: Assist in organizing trips for students (6); have meetings between teachers to share ideas (5); expand WCK throughout country (4); supply more resources/books to clubs (4); improve coordination of activities (3); allocate funds for action groups (2); find means of motivating members (2); bring services closer to schools (2); strengthen regional action groups (2); establish hostels throughout Kenya (1); target specific projects (1); start income-generating projects (1); more trips for patrons (1); put more effort in club activities (1); schools should contribute finances to clubs (1); expand Ecology program to other regions (1); local communities should assist clubs (1); organize water quality monitoring programs (1); improve cooperation from school administration (1); make programs more interesting to students (1); register a manageable number of students in clubs (1); send newsletter of WCK activities (1); draw map of how to reach HQ and offices and include in correspondence (1); organize zonal and regional competitions (1);

Table 5-7. Primary impacts of WCK

CATEGORY	Teachers N=77	Students N=21	Staff N=9	Conservation/Govt N=20	TOTAL N=127
Impacts					
Increased awareness/interest in conservation among students	32	7	5	11	N=55 (43%)
Enhanced public & community participation in conservation	16	8			N=24 (19%)
Increased # of trees from tree planting across country	6	4		1	N= 11 (9%)
WCK model for other wildlife clubs & youth movements			5	5	N= 10 (8%)
Not sure	9				N= 9 (7%)
Brought students into national parks	5	1	1	1	N= 8 (6%)
Majority of conservation professionals in Kenya were WCK members			4	1	N= 8 (6%)
Cleaner environment from clean-ups	6				N= 6 (5%)
Bringing students together	5				N= 5 (4%)
Lobbying force in 1970s against poaching				4	N= 4 (3%)
Make conservation a Kenyan issue, not a colonial issue				3	N= 3 (2%)
Large # of Kenyans were WCK members			1	2	N= 3 (2%)
Enhanced environmentally responsible behavior of students		2	1		N= 3 (2%)
Created network of clubs in Kenya			1	1	N= 2 (2%)

Table 5-7--continued

Note:
Conservation/govt: Influenced specific regional conservation issues, such as Kakamega forest (1); provides practice in field for students (1); created government support for conservation (1);

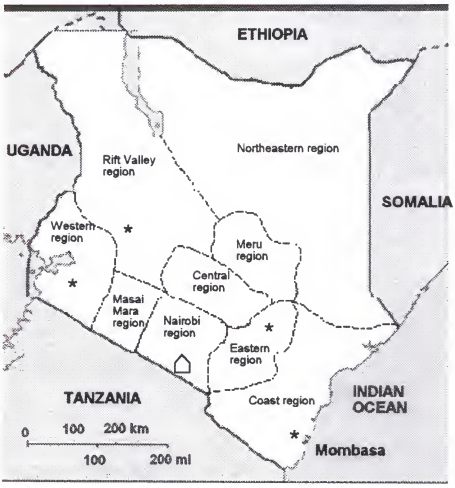
Teachers: Increased number of students involved in WCK (3); Increased forest conservation (3); Increased marine conservation (2); decreased poaching (2); helped other conservation organizations (1); supplying resources to schools (1); encouraged district action groups (1); provide ideas and advice to clubs (1); environmental activities have become major events in school's activities (1);

Table 5-8. Benefits to students from WCK

CATEGORY	Teachers N=77	Students N=21	Staff N=9	Conservation/Govt N=20	TOTAL N=127
Benefits					
Exposure to conservation/ knowledge & skills	55	10	2	8	N=75 (59%)
Trips to parks/free entry to parks	20	8	8	16	N=52 (41%)
Interaction with other students	11	2	1	4	N=18 (14%)
Participation in rallies/seminars/ competitions	5	1	1	2	N= 9 (7%)
Experience for conservation career	4	1		3	N= 8 (6%)
Awards and prizes	3	1			N= 4 (3%)
Films and resources	1		2	1	N= 4 (3%)
Promotes environmentally responsible behavior		1	1	1	N= 3 (2%)
Komba magazine/articles published	1		1		N= 2 (2%)
Aids academic performance				2	N= 2 (2%)
Profits from sale of tree seedlings		2			N= 2 (2%)

Note:
Staff: Holland-youth exchange program (1);

Teachers: hostel facilities (3); members can influence community (3); income-generating activities (2); planting trees at home (1); members learn to plan and set objectives (1); members appreciate role of youth in conservation (1);



* = regional office
⌂ = headquarters

Figure 5-1. Map of the Wildlife Clubs of Kenya regions

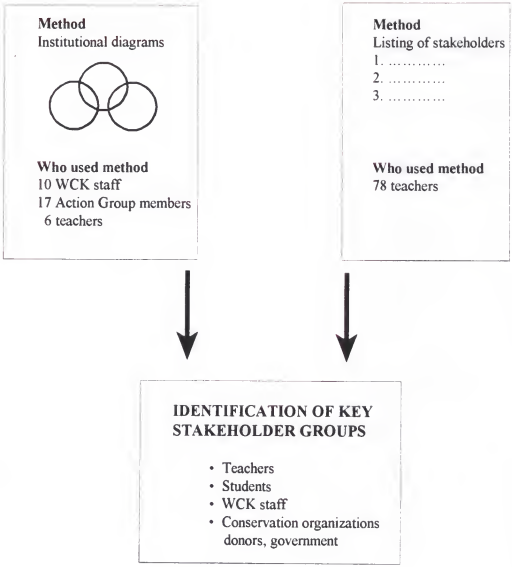


Figure 5-2. Phase I: Identifying who participates in participatory evaluation

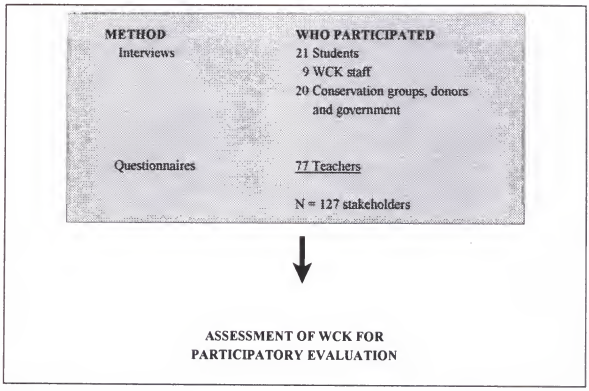


Figure 5-3. Phase 2: Implementing participatory evaluation

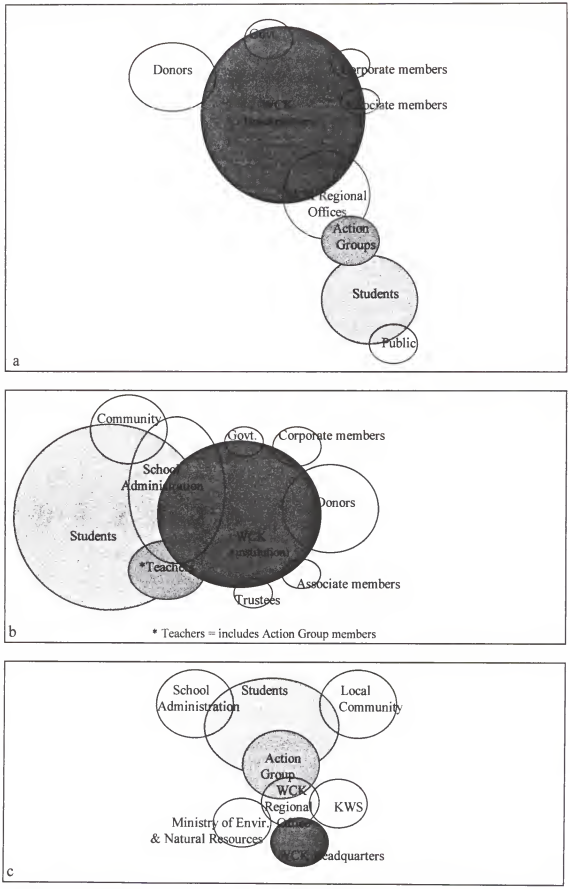


Figure 5-4. Stakeholder analysis a) by staff, b) by action group, c) by local teachers

CHAPTER 6
LESSONS LEARNED AND RECOMMENDATIONS FOR THE FUTURE

The findings from this study meet an acute need for an innovative yet effective evaluation model for both environmental education and the wider conservation community. In this study, both the *process* of the research and the *products* provide rich insight into three focal issues: the role of wildlife clubs in Africa (Chapter 3); capacity building in participatory evaluation for grassroots conservation organizations (Chapter 4); and the outcomes of involving stakeholders in participatory evaluation of environmental education programs (Chapter 5).

While many studies emphasize the final products of research, the *process* of developing and implementing a model for participatory evaluation revealed critical lessons of importance to the field of conservation. If we as conservationists expect to build on past successes and failures, documenting and sharing lessons learned represents an important component of disseminating research results. The lessons learned presented in this chapter form the basis for recommendations for the future that have the potential to impact the efficacy of our conservation initiatives.

Assessing Impacts and Future Directions of Wildlife Clubs in Africa

Lesson 1: Wildlife and environmental club programs in Africa show strong consistency in activities, constraints, success factors, impacts, and needs.

This study reveals a striking similarity between both problems and opportunities among wildlife club programs in Africa, despite the multiple countries, different

ecosystems, and political situations represented. These parallels are consistent across club programs that have different available financial resources, as well as organizational longevity. This finding points to the critical need for networking between programs to learn from both success stories and failures.

Recommendation 1: Promote opportunities for formal networking between wildlife club programs, as well as other conservation groups in Africa to share lessons learned and chart future directions.

As clubs are reporting similar problems, activities, and opportunities, the need for regular networking among wildlife club programs is acute. In addition, wildlife club programs must create partnerships with government agencies, community groups, and international conservation groups to further their goals and expand their resources.

The implementation of this recommendation is dependent on aggressive fundraising campaigns to solicit support for formal meetings. Creating a body of representatives from wildlife club programs could facilitate networking and fundraising as well. The expansion of partnerships will depend on the initiative of wildlife club programs and the willingness of other conservation groups to support these opportunities for networking.

Lesson 2: Wildlife clubs in Africa have influenced a generation of people and policies involved in conservation.

Wildlife clubs have influenced a generation of both people and policies across Africa. While wildlife clubs have created an influence in conservation, the consistency in activities both over time and countries points to continuation of similar activities. The

need exists to continue the efforts of wildlife clubs, but also to assess effective strategies for the future.

Recommendation 2: Efforts should be strengthened to build on the past success of wildlife clubs, but needs assessment should be done to assess the effectiveness of current instructional strategies and guide direction for the future.

Wildlife clubs across Africa should become "adaptive" organizations so that both national offices, regions, and local clubs can adapt their strategies to changing times and environmental issues. Systematic needs assessment should be conducted to assess the needs that can be met by wildlife clubs and the appropriate instructional strategies for addressing these needs. These efforts will result in more effective programming across Africa.

Lesson 3: Financial and organizational sustainability are the major constraints facing wildlife club programs in Africa.

Lack of finances is the primary constraint of wildlife clubs in Africa. Financial sustainability represents a significant need for the future of wildlife and environmental clubs in Africa. In addition, factors such as teacher transfers and staff retention impact the sustainability of the organization as a whole.

Recommendation 3: Enhance capacity-building for wildlife clubs in the creation of endowment funds and other organizational strategies to ensure sustainability.

Formal networking opportunities such as annual conferences could provide the forum for training in creating endowment funds for financial sustainability. Wildlife club programs also must be able to sustain themselves at the level of the individual club and the level of educational programming.

To address sustainability at the club level, club members should receive training in strategies for maintaining an active club with the departure of teachers or strong student leaders. Such trainings could emphasize strategies for recruiting a new teacher, as well as methods for conducting membership drives and building leadership among students. Administration at wildlife club offices must recognize and appreciate staff efforts to promote commitment when raising salaries is impossible due to lack of funds.

Lesson 4: The primary impacts of wildlife clubs as perceived by staff are increased knowledge and awareness about the environment.

This impact reveals a primary focus of wildlife clubs on awareness and knowledge of conservation. It may also reflect the difficulty in measuring long-term changes on behavior as a result of environmental education programs. This finding meets an important aspect of environmental education but also reflects the need for wildlife club programs to integrate critical thinking and conservation action into their objectives.

Recommendation 4: Implement educational strategies within wildlife clubs for developing critical thinking skills that lead to informed conservation action.

An emphasis within the field of environmental education has been the development of critical thinking skills about environmental issues (North American Association for Engironmental Education 1998). Creative training for staff and teachers on these current pedagogical methods could promote the focus on critical thinking skills within wildlife clubs. Such an emphasis could also integrate local conservation issues so that students could make informed decisions about the best action that integrates the needs of multiple stakeholders.

Lesson 5: The majority of wildlife club programs do not implement systematic monitoring and evaluation of their programs.

The majority of wildlife clubs do not implement systematic evaluation as a part of on-going program operations. There is a need for a systematic monitoring and evaluation system to measure impacts and provide direction for improvement.

Recommendation 5: Provide training in monitoring and evaluation for all wildlife club programs and develop common indicators for assessing impacts throughout Africa.

The results from this study revealed that most clubs use a similar suite of methods and indicators, but lack an organized system for documentation and monitoring of results. Capacity building in evaluation at an annual forum could provide the means for developing a set of common indicators, evaluation questions, and data collection methods. Such a standardized system would create concrete evidence of impacts across Africa, as well as guide future program improvements. Without measuring the success of clubs, the wildlife club movement risks at best repeating traditional activities without assessing their effectiveness. At worst, wildlife clubs risk the danger of replicating failure, rather than success.

Capacity Building in Participatory Evaluation for Grassroots Conservation Programs

Lesson 6: Information management is a precursor to effective monitoring and evaluation.

Lack of experience in information management can hinder adoption of strategies for participatory evaluation. Likewise, skills in collecting and documenting feedback from programs are prerequisites to monitoring and evaluation.

Recommendation 6: Capacity building in information management, data collection, and analysis, presentation and use of results will support the use of monitoring and evaluation.

For evaluation to succeed, capacity building in information management and requisite skills for program evaluation are critical.

Lesson 7: Donor demands for products may impede the ability of small organizations to implement participatory evaluation.

The majority of grassroots organizations are dependent on outside funding for their existence. Donor-driven project management is a reality, but donors and the conservation community can exert a positive influence by focusing on processes, as much as products. If donors require and fund an M&E component in project proposals, then small NGOs can start to document their impacts and share their successes and failures. Unfortunately, most donors fund the implementation of projects, rather than monitoring and evaluation of their impacts and effectiveness.

Recommendation 7: Educate the donor community on the need for participatory monitoring and evaluation.

Practitioners in conservation projects usually represent the target group for capacity-building and dissemination of resources for new conservation strategies. With participatory evaluation, however, we may increase awareness and skills within organizations, but the efforts will fail without subsequent capacity-building for donors. If NGOs submit final reports based on participatory evaluation, donors need education in accepting, understanding, and learning from these results.

Lesson 8: Building on existing vocabulary and institutionalized practices promotes the use of participatory evaluation within an organization.

Within WCK, the use of familiar vocabulary and methods such as "tests" and "competitions" enhanced the acceptance of principles of participatory evaluation. In an evaluation of the WCK Ecology program after the trainings, the staff developed before and after-program tests to evaluate the impacts of the program. In addition, the incentive program used the vocabulary of competitions to institutionalize an evaluation system at WCK.

Recommendation 8: Organizations can use existing knowledge and organizational structures as a foundation for integrating components of participatory evaluation into on-going project activities.

Each institution has a culture of existing knowledge and practices. Rather than present participatory evaluation as an alternative to the "old way of doing things", we can integrate familiar practices into the framework of participatory evaluation.

Lesson 9: Without the addition of human resources, participatory evaluation results in additional work for some individuals.

If an education officer collects data on the impacts of her program, someone has to analyze the information. In the long-term, participatory evaluation can make one's job easier. But the process requires extra time on the part of staff members. Within WCK, it was important to show that aspects of participatory evaluation could result in some tangible benefits, such as efficient access to data, improvement of programs, and information for donors.

Recommendation 9: Rather than emphasizing the ease of practicing participatory evaluation, we should emphasize direct benefits to small organizations from monitoring and evaluation.

If the derived benefits exceed the inputs, then participatory evaluation will have a greater chance of acceptance. Arguing that no one will have to work any harder while practicing monitoring and evaluation is a fallacy.

Lesson 10: Individuals and organizations may conduct participatory evaluation that reveals needed changes, but they may not have the resources or the decision-making power to adapt.

This factor can lead to frustration, if staff conduct evaluation and recommend changes that are not implemented due to lack of funds or power to influence organizational change.

Recommendation 10: Organizations will have to commit both human and financial resources to support change from evaluation.

When sources of funding are nonexistent, an organization may have to prioritize suggested changes, so that adaptation can occur as soon as funds become available. The needed adaptations must be kept on the forefront of the organizational agenda however. In terms of decision-making, leaders of an institution must support recommended changes from staff members. Without this support, incentives for participatory evaluation will crumble.

Lesson 11: Cohesion and communication within an organization is key to effective participatory evaluation.

"You have to involve all the staff," said one staff member. "If one decision-maker doesn't understand a new strategy you've suggested, then you're finished. There is a real need for understanding and open-mindedness for monitoring and evaluation to work. But that all depends on individuals." Organizations are composed of individuals- with different priorities, levels of motivation, and openness to change. In addition, institutions and projects operate in complex contexts, with competing demands from an array of stakeholders. Most people working in conservation can tell a story of a conservation project that was a "worst case scenario". Personalities conflict, donors pull out, key staff members leave. In the ideal world, participatory evaluation would function in organizations where every individual was a "team player". Realistically, however, participatory evaluation must be able to exist in less-than-perfect contexts.

Recommendation 11: Formal channels of communication must exist to ensure open exchange of ideas between different levels of the organization and individuals.

Exchange and exposure to new ideas emerging from monitoring and evaluation will promote acceptance of failures, successes, and subsequent adaptation. Formal channels of communication should also support organizational learning.

Lesson 12: Adoption of participatory evaluation by an organization takes time.

It is unrealistic to expect an organization that has not been monitoring and evaluating its programs to integrate participatory evaluation into all projects in a period of 6-12 months. However, this time period is adequate to assess factors supporting the adoption of participatory evaluation, as well as to document the initial process.

Recommendation 12: Long-term studies of participatory evaluation should build on short-term findings.

Long-term studies of projects practicing participatory evaluation are important to extend our learning. Without such studies, the shelf-life of our knowledge about participatory evaluation may expire on the date that short-term studies end. If projects that initiated monitoring and evaluation fail to continue its practice, this information should be documented and new solutions found.

Implementing Participatory Evaluation of Environmental Education Programs

Lesson 13: Individuals at different levels of an EE program view the organization from different perspectives.

The stakeholder analyses revealed both similarities and differences between the perceptions of an organization held by staff, action group members, and teachers. Without the stakeholder analyses, these perceptual differences would not be documented or incorporated into the evaluation design.

Recommendation 13: Tools such as stakeholder analysis should be used when designing evaluations to incorporate multiple perspectives within an organization into the evaluation.

Without this step of stakeholder analysis, the evaluator and WCK administration risked designing an evaluation that could be irrelevant to critical program participants, such as teachers who lead wildlife clubs at the grassroots level. EE organizations should incorporate tools such as stakeholder analysis to guide evaluation design.

Lesson 14: Collecting evaluation data from different stakeholder groups provides insight into both similar and different assessments of program impacts, strengths, weaknesses, and recommendations for improvement.

The results from the participatory evaluation with the four key stakeholder groups allowed WCK to view a picture of the organization's past, present, and future from the eyes of staff, teachers, students, and representatives from conservation, donors, and the government. This feedback provided both breadth and depth in data collection for the evaluation.

Recommendation 14: Participatory evaluation should be used to assess EE programs from the perspective of key stakeholder groups.

Collecting and documenting feedback from different stakeholder groups can allow program planners and staff to prioritize areas for improvement, identify partnerships, and publicize past impacts and future programs. Designing an evaluation that only collects data from one stakeholder group, such as students, may reveal a one-sided perspective of the organization.

Lesson 15: Participatory evaluation places the evaluator in the non-traditional role of facilitator and negotiator, and allows project stakeholders to become the key actors in the evaluation.

This lesson is particularly relevant to the field of EE, where programs generally lack the financial resources to hire external evaluators to conduct comprehensive program evaluation. In addition, participatory evaluation builds the capacity of staff to design, implement, and use their evaluation results.

Recommendation 15: Environmental education programs should adopt participatory evaluation as a model, as the method depends on the participation of key project stakeholders.

Participation of stakeholders in all phases of program evaluation increases the likelihood that evaluation results will be used. Participatory evaluation provides a cost-effective model as project staff are involved in all phases of evaluation, from design, implementation, and use of evaluation results. Such a pragmatic model is critical if the field of EE wishes to address the current low priority given to program evaluation.

Lesson 16: Participatory evaluation allows the context of the EE program to guide both the evaluation questions and methodology, allowing for creative and relevant approaches to evaluation.

Participatory evaluation allows for creative approaches to evaluation, a step needed given the field of EE's dependence on methods such as pretest/posttest for showing achievement of program objectives. As context guides methods, participatory evaluation allows for both qualitative and quantitative tools in data collection to address relevant evaluation questions.

Recommendation 16: Participatory evaluation should be implemented in EE as a strategy for exploring creative approaches to evaluation.

Through participatory evaluation, the field of EE can move beyond the behaviorism versus constructivism debate in assessment to *participation* which allows for integration of tools relevant to gathering data on pertinent evaluation questions. Clearly, there is an important place for tools such as pretests and posttests in evaluation of EE programs. But we can expand our repertoire of methods with the participation of project staff and other stakeholders.

Lesson 17: Participatory evaluation requires an investment of time and capacity-building, but the outputs provide evidence of concrete impacts and direction for program improvement.

In the case of the Wildlife Clubs of Kenya, both staff and teachers invested time in training for participatory evaluation to build skills in identifying evaluation questions, stakeholders, data collection tools, and using results. The outputs could be used by administration to improve programs, but also to show evidence of impacts cited by a variety of stakeholders.

Recommendation 17: Participatory evaluation should become a priority in the field of EE, in terms of training, funding, and staff responsibility.

Trainings for staff on evaluation methods are critical to ensure participatory evaluation is integrated into on-going program operations. Donors and program planners of environmental education projects must also mandate that evaluation becomes an integral component of project implementation.

Lesson 18: Participatory evaluation results in learning within the EE community, at both the individual and institutional level.

Within WCK, the process of participatory evaluation promoted discussion, sharing, conflict, and consensus. Evaluation is innately a political process, which exposes both strengths and weaknesses within an organization. But when these results are discussed within the program, the evaluation process promotes exchange of ideas that improves EE programs

Recommendation 18: The EE community should network to share lessons learned, methods, indicators, constraints, and opportunities regarding attempts to integrate participatory evaluation into EE.

EE conferences and networking sessions must seize the opportunity to discuss strategies and trends in evaluation for the field. Only through sharing lessons learned of both opportunities and constraints in evaluation can we build a shared knowledge of integrating evaluation into our EE programs. We must take evaluation seriously as a priority in order to legitimize the field of EE in the current political climate.

Without evaluation, ineffective environmental education programs will continue with serious consequences to the habitats and natural resources these programs seek to protect. This research developed an appropriate evaluation model and demonstrated the importance of participatory evaluation as a critical tool for the conservation community. The results assessed concrete impacts of environmental education programs, specified variables leading to success, and provided the first quantitative measure of the efficacy of capacity building in participatory evaluation.

For the Wildlife Clubs of Kenya, the training and implementation of participatory evaluation represented the organization's first attempt to document and measure the impacts of environmental education programs that have served as a model for other grassroots conservation projects worldwide since 1968. For the majority of staff and teachers, the training provided their first opportunity to measure their own success using systematic methods. In measuring their success, they also gained direction for the future improvement of their programs.

The success of this research in implementing participatory evaluation at the Wildlife Clubs of Kenya is clearly a model that has applications to other conservation programs worldwide. Local participation increases the success of project implementation of conservation initiatives. This research reveals the role of local participation in enhancing the success of monitoring and evaluation.

As conservationists, we applaud our own efforts to enhance participation in project planning and implementation. The results from this research demand that the conservation community extend the role of participation to include program evaluation through *participatory* strategies. Only through such efforts can we increase the local relevance of conservation projects, ensure measurement of impacts, and enhance the success for protecting biodiversity for the future.

APPENDIX A
SURVEY AND INTERVIEW INSTRUMENTS

PRE-TRAINING INTERVIEW GUIDE
WCK Staff

Name _____

JOB PROGRAMMING

1. Tell me about your role in WCK and your responsibilities.

2. What do you see as the primary goals of WCK?

3. Which WCK programs have been successful in your opinion?
   How do you know?

4. Which WCK programs have been unsuccessful? How do you know?

5. Which projects have stated objectives? What are some examples?

   How do you tell if your objectives have been met?

6. When you conduct a WCK program what types of information do you collect and document about the program?

7. When you develop a program, what types of information do you collect and document to help you know if the program will be appropriate for the audience before you implement it?

EVALUATION/PERSONAL SKILLS

8. How often have you been required to conduct an evaluation of your projects with WCK?
   At previous jobs?

9. Have you ever attended a training on M&E?
   If yes, what skills did the training give you?

10. How often has a project for which you've worked ever been evaluated by someone else?

11. Suppose you were asked to evaluate a WCK program. How confident would you feel conducting the evaluation?

What knowledge and skills do you think are necessary to conduct an evaluation?

What knowledge and skills do you need to gain confidence in conducting evaluations?

12. What would you like to see as topics for the upcoming trainings?

EVALUATION/WCK PROGRAMS

*13. Who are the primary stakeholders of WCK programs?
How would you define the term 'stakeholder'?

*14. Who do you think should be involved in monitoring and evaluating WCK programs?

*15. What are the differences between participatory evaluation and conventional evaluation?

16. Do you know of any WCK programs that have been evaluated?

*17. When do you think is the best time to conduct an evaluation?

18. Who do you think would be most effective at evaluating WCK programs? Outsiders or insiders?

*19. What do you think are the primary reasons for evaluating WCK programs? What are the benefits?

20. What are the primary constraints to evaluating programs at WCK?
What could be done to overcome each constraint?

*21. What questions do you think should be the focus of an evaluation at WCK?
What information would you like to see generated from an evaluation?

EVALUATION/GENERAL
22. When someone says evaluation, what are words that you associate with that term? Write down as many words as you can that you associate with evaluation.

23. People have different images of an evaluation and an evaluator. Sometimes we can use drawings or pictures to represent our ideas, just like the WCK members do in the art competitions. When you see or hear about an evaluator, what kind of picture comes to you mind? Use this paper and markers and draw the picture that comes to your mind when you think of an evaluator.

24. Here are a group of 9 index cards, that represent different tasks that you might perform in your job. First, I want you to rank them in order of how much time you spend on each task. The first card should represent the task that you spend the MOST time doing with your job. If you don't perform the task at all, give it a zero.

Cards = *coordinating logistics of program; implementing program; designing program; writing final report; documenting data to monitor program effectiveness; writing proposals; locating funding; pilot testing the program; evaluating impacts of program.*

Now I would like you to rank the cards in terms of your opinion of the importance of each steps to the success of EE programs. The first card should represent the most important step.

25. Imagine that you are in charge of conducting an evaluation of the Ecology program at WCK. On this piece of paper, take about 5 minutes and outline the steps you would take to design and conduct the evaluation.

26. Give two examples of good objectives for an EE program that you work on, such as the Kakamega forest project. What makes a good objective?

*27. What are some sources of information you could use for an evaluation of a WCK program?
List as many tools as you can that you could use to collect information during an evaluation.

*29. What is an indicator in an evaluation? Could you give me an example?

*30. How would you use the results of your evaluation?
To whom would you present the results?

*31. What format would you use to present the results?

* = questions used for pretest scores

POST-TRAINING INTERVIEW GUIDE
WCK Staff

1. First of all, how valuable was this workshop to you, compared to other workshops?
What, if anything, did you gain from the workshop?

2. How feasible will it be for you to begin to implement evaluation of your projects?

3. What challenges do you still face with respect to conducting participatory evaluation of your WCK projects?

*4. How important do you think it is to conduct evaluations of WCK projects? Why?

*5. Who do you think should be involved in evaluating WCK projects?

*6. Who are the stakeholders in WCK? What is a stakeholder?

*7. What do you see as differences between conventional evaluation and participatory evaluation?

*8. When do you think is the best time to evaluate WCK programs?

9. How, if at all, did the workshop change your ideas about evaluation?

10. How confident would you feel now in designing an evaluation of a WCK program?
Do you feel more or less confident than before the workshop?

11. After the workshop, what are words that you now associate with evaluation?

*12. What programs would you like to evaluate now? What guidelines would you use for planning an evaluation? What questions would you like to ask?

*13. What are some sources of evidence you would use?
What tools would you use?

*14. What are some indicators you would use? What is an indicator?

*15. When your evaluation was completed, in what format would you present the results?

*16. To whom would you present the results?

17. How useful was the fieldwork during the workshop for you?

18. What suggestions do you have for improving the workshop?

* = questions used in post-training scores

PRE-TRAINING INTERVIEW GUIDE
Action Group members

Name: School:
Highest ed level: Gender:
# of years as WCK patron: Were you a WCK member in school?

*1. In your opinion, what are the reasons for evaluating EE programs?

2. What are the negative consequences of failing to evaluate EE programs?

*3. When is the best time to conduct evaluation of EE programs?

4. How do you currently evaluate the effectiveness of your WCK activities? How do you tell if the objectives have been met?

*5. Who do you think should be involved in evaluating WCK programs?

*6. Suppose you were evaluating a WCK program in your region. List an example of an evaluation question you might ask.

7. What are some sources of evidence you could use in an evaluation of a WCK program in your region?

*8. List as many tools for collecting data in an evaluation as you can.

*9. What is an indicator in an evaluation? List examples of an indicator in an evaluation of a WCK program.

10. What are the characteristics of a good objective for an educational program?

*11. What is a stakeholder? Who are the stakeholders in WCK programs?

*12. What are the differences between participatory evaluation and conventional evaluation?

*13. Imagine you conducted an evaluation of WCK program in your region. To whom would you present the results once the evaluation was completed?

*14. In what format would you present the results?

15. Once your evaluation was completed, how would you use the results?

16. Suppose you were asked to conduct an evaluation of a WCK program. Do you feel you have the necessary experience/skills to conduct the evaluation? What skills do you need to gain confidence?

17. If you had to conduct an evaluation of a WCK program in your region, what steps would you take to design the evaluation?

POST-TRAINING INTERVIEW GUIDE
Action Group members

Name:

1. How valuable was this workshop to you? What, if anything, did you gain from the workshop?

2. How feasible will it be for you to begin to implement evaluation of WCK activities in your region?

3. What constraints do you still face with respect to conducting participatory evaluation of WCK activities in your region?

*4. In your opinion, what are the reasons for evaluating EE programs, such as WCK activities?

5. What are the negative consequences of failing to evaluate EE programs?

*6. Who do you think should be involved in evaluating WCK projects?

*7. When do you think is the best time to evaluate WCK programs?

*8. What is a stakeholder? Who are the stakeholders of WCK?

9. How, if at all, did the workshop change your ideas about evaluation?

10. Do you feel you have the skills now to design evaluation of WCK activities in your region? Do you feel more or less confident than before the workshop?

11. What WCK programs would you like to evaluate now?

*12. What questions would you ask in the evaluation? List an example of an evaluation question.

*13. What are some sources of evidence you would use? What tools would you use to collect data in the evaluation?

*14. What is an indicator? What are examples of indicators you would use?

*15. When your evaluation was completed, in what format would you present the results?

*16. To whom would you present the results?

* 17. What is the difference between participatory evaluation and conventional evaluation?

18. How useful was the fieldwork to you?

19. What suggestions do you have for improving the workshop?

PRE-TRAINING QUESTIONNAIRE AND KEY
Key applies to all questionnaires
1-day workshops

Name:
Region:
School:
Gender: Number of years as WCK patron:
Were you a WCK member in secondary/primary school?

*1. In your opinion, what are the reasons for evaluating environmental education programs like WCK activities?
4 pts total (1 pt per reason)

*2. When is the best time to conduct evaluation of environmental education programs?
5 pts = continuous, from planning to product.
2 pts = other (e.g. at end of project)

*3. Who do you think should be involved in evaluating WCK programs?
5 pts = program stakeholders, or listed ≥ 3 program stakeholders
3 pts = listed ≥ 2 stakeholders
2 pts = internal person
1 pt = external person (e.g. consultant or headquarters)

4. How do you currently evaluate the effectiveness of your WCK activities? How do you tell if your objectives have been met?

*5. Suppose you were evaluating a WCK program in your region. Can you list an example of an evaluation question you might ask?
5 pts (question must be a broad evaluation question, such as "How effective are the programs? Have we met our objectives?" NOT an interview question)

*6. What are some tools for collecting data that you could use in an evaluation of a WCK program in your region?
1 pt per tool (5 pts maximum)

*7. What is an indicator in an evaluation? Can you list an example of an indicator for a WCK program?
3 pts = definition of indicator
4 pts = example of an indicator

*8. What is a stakeholder? Who are the stakeholders of WCK programs?
3 pts = definition
1 pt per stakeholder listed (max. = 4 pts)

POST-TRAINING QUESTONNAIRE
1-day workshops

*1. In your opinion, what are the reasons for evaluating environmental education programs, such as WCK activities?

2. What constraints do you face with respect to conducting participatory evaluation of WCK activities in your region?

*3. Who do you think should be involved in evaluating WCK activities or programs?

*4. When do you think is the best time to evaluate WCK programs?

*5. What is a stakeholder? Who are the stakeholders of WCK?

*6. What are the differences between participatory evaluation and conventional evaluation?

7. How, if at all, did the workshop change your ideas about evaluation?

8. Do you feel more or less confident about conducting evaluation of WCK activities as a result of the workshop?
What skills did you gain during the workshop?

*9. Suppose you conducted an evaluation of a WCK activity in your region or school. What is an example of an evaluation questions you could ask?

*10. What tools could you use for collecting data in the evaluation of a WCK activity in your region or school?

*11. What is an indicator in an evaluation?
List one example of an indicator you could use in an evaluation of a WCK activity in your region or school.

*12. When your evaluation was completed, to whom would you present the results?

*13. In what format would you present the results?

INTERVIEW GUIDE
WCK STAKEHOLDERS

Wildlife Clubs of Kenya is trying to assess its effectiveness and impacts through participatory evaluation, so we want to get feedback from different stakeholder groups in WCK. The purpose of this interview is to get your opinions about WCK, which will help us to improve our programs. The information you give is confidential, and we really appreciate you taking the time to help WCK.

Name _____ **Gender:** _____

Organization/position _____
# of years involved with WCK _____

Affiliation/interest with WCK_____

1. First, could you just tell me a little about your involvement with Wildlife Clubs of Kenya?
When did you get involved/interested? In what capacity?

2. Were you a WCK member when you were in school? If yes, what do you remember about the activities? What influence did the WCK activities have on you?

3. In your opinion, what have been the most effective activities or programs that WCK has conducted since its inception in 1968?
- How do you know it was successful?

4. What do you think have been the least effective activities/programs of WCK?
- How do you know they were not successful?

5. What do you think are the biggest constraints or problems WCK faces as an organization?

6. What recommendations do you have for improving WCK?

7. What do you think have been the primary impacts of WCK in Kenya?

8. How do you think students benefit from participation in Wildlife Clubs?

9. Since WCK has been in Kenya since 1968, which periods have been the most active or most effective? The least active?
    - Do you think the majority of Kenyans are familiar with WCK?

10. Other comments and suggestions?

INTERVIEW GUIDE
Students

Name _____	Gender _____
School _____	Region _____
# of years in WCK _____	Age _____

1. How long have you been a WCK member?

2. What reasons made you decide to join WCK? How do you benefit from Wildlife Clubs?

3. What are the primary activities that your club does?
   * On a scale of 1-5, with 5 being most active, how active is your club?

4. Which club activities have been the most successful? How did you know they were successful?

5. Which activities have been the least successful? How did you tell they were not successful?

6. Has WCK influenced the way you act or think about the environment? How?

7. What are the primary constraints or problems faced by the wildlife club at your school?
   * WCK as an organization?

8. What are your recommendations for improving WCK?

9. What do you think have been the biggest impacts of WCK in Kenya?

10. Do you get Komba at your school? Have you read a Komba issue in the last year? (Which one? What was your favorite part?)

11. What do you want to be when you grow up?

12. Other comments or suggestions?

WILDLIFE CLUBS SURVEY

SURVEY INSTRUMENT
WILDLIFE CLUBS IN AFRICA

Thank you so much for responding to this survey! Your input is important for documenting the impacts of wildlife and environmental clubs, as well as for improving our efforts in environmental education. Please return the survey by December 5, 1997 in the enclosed envelope or via e-mail: rosener@rosslyn.iconnect.co.ke

Name: _____
Position/Organization : _____
Mailing address: _____
E-mail address: _____
FAX #: _____
Name of Wildlife Club Program/Country: _____ _____

PLANNING

1. When was the wildlife/environmental club program in your country started? By whom?

2. What are the goals and objectives of your wildlife/environmental club program?

3. Who is the target audience(s)?

4. What is the administrative structure of the wildlife/environmental club program in your country?

5. What are your primary sources of funding?

6. What are the major problems and constraints that the wildlife/environmental clubs in your country face as an organization?

IMPLEMENTATION

7. What are the primary activities or programs of the wildlife/environmental clubs in your country?

8. How many clubs are active in your country? How does your organization define an "active" club?

9. Do the clubs collaborate with existing organizations and groups in the community? How?

10. What media are used in the wildlife/environmental club program?

11. What are the benefits to participants in the wildlife/environmental clubs?

PRODUCT

12. What have been the primary impacts of wildlife/environmental clubs in your country?

13. What have been any unexpected impacts of the wildlife/environmental club program?

14. What methods, if any, are used to evaluate the wildlife/environmental club programs in your country?

15. What factors have led to the successes of wildlife/environmental clubs in your country?

16. What recommendations do you have for improving wildlife/environmental clubs?

17. What are your current and future needs?

18. Is there a need within your organization for training on evaluation of the impacts and effectiveness of wildlife club programs? How would such training help your environmental education efforts?

THANKS FOR YOUR HELP IN COMPLETING THIS SURVEY!

WCK TEACHER SURVEY

WCK is trying to improve its program by getting feedback from patrons. You can help by answering this survey. Please answer individually and as honestly as possible. Your responses are confidential, and we appreciate your help! Please return the surveys to the WCK office.

1. How long have you been a WCK patron? _____

2. Were you a WCK member when you were in school? YES ____ NO _____

3. What were your reasons for becoming a WCK patron?

4. What are the primary activities that you conduct with your WCK clubs?

5a. What have been your most successful activities?

5b. How do you know that they were successful? What signs do you use to tell the activity was a success?

6a. What have been your least successful activities?

6b. How did you know that they were not very successful?

7. What methods do you use to evaluate the effectiveness of your WCK activities?

8. What are the constraints you face as a patron in implementing WCK activities?

9. What recommendations do you have for improving WCK as an organization?

10. Do you receive the Komba in the mail? YES _____ NO _____
If no, how do you get your copy of Komba?

11. How do you think WCK members benefit from participation in Wildlife Clubs?

12. What do you think have been the impacts of WCK in your region?

13. Are you expected to report any information to the regional office or action group on your club's activities? If yes, what information and how is it reported?

Your region _____ Name of your school _____

Your gender: Male____ Female ____

THANK YOU SO MUCH FOR YOUR HELP!

PRETEST AND POSTTEST FOR NAIROBI NATIONAL PARK ECOLOGY PROGRAM
Secondary school students
(Key applies to primary school test)

Name
School Class
Have you ever visited Nairobi National Park before?

1. What are two habitats in the Nairobi National Park? For each habitat, name one plant found in that habitat and describe an adaptation that allows that plant to survive in that environment.

(1 pt each, 6 total)

HABITAT	PLANT	ADAPTATION
a. Forest habitat	croton megalacarpus	shedding of leaves
	lichens	symbiotic relationship
	eucalyptus	grows tall, deep rooted
b. Grassland	grasses	fibrous roots, roots don't have to penetrate
	fern	roll leaves when hot
	lichens	can cling to rocks
c. Riverine forest	arrow poison tree	poison in bark
d. River	algae, riverwarts	can float
e. Wetland		

2. Name 2 types of associations between plants or animals. For each type of association, give one specific example.

(1 pt each, 4 total)

TYPE OF ASSOCIATION	EXAMPLE
a. symbiotic	lichens, mosses
b. parasitic	mistletoe

3. Make a list of 2 exotic and 2 indigenous trees found in Nairobi National Park.

(1 pt each, 4 total)

EXOTIC (e.g.)	INDIGENOUS (e.g.)
eucalyptus/blue gum	croton megalocarpus, croton dichogamus
cyprus	camphor, meru oak
gravilia robusta	olea europa, oleo africana, podo
pine	

What is the difference between exotic and indigenous trees?
(2 pts)

Exotic trees are introduced, grow fast,
Indigenous trees are native, grow naturally, take time to mature,

4. What are the 2 main habitats in Nairobi National Park? For each habitat, name 1 animal found there and describe an adaptation the animal has in order to survive in that environment.

(1 pt each, 6 total)

HABITAT	ANIMAL	ADAPTATION
a. forest	bushbuck	dark camouflage, coat
	dikdik	black spot, marking territory
	suni	
	monkey	
b. grassland	all other antelope	camouflage, shape of horns
	buffalo	eat at different levels, migratory
	cheetah, leopard	
c. river	hippo, water turtle	
	crocodile, crested crown cranes	
d. wetland	hippo	no sweat glands, webbed feet
e. riverine forest	hammercock	flight
	hippo, croc	

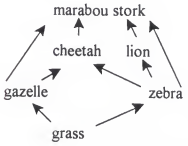
5. Name at least 2 species of trees found in Nairobi National Park.

(1 pt each, 2 total)

e.g. gall acacia, croton megalacarpus, eucalyptus, sandpaper tree, oleo, acacia

6. The following are some of the plants and animals found in the park: Thompson's gazelle, grasses, lion, cheetah, zebra, marabou storks. Arrange these animals and plants into a food web below.

(1 pt each, 6 pts total)



7. Name one browsing animal and one grazing animal in the park. *(1 pt each, 2 total)*
   BROWSER: e.g. rhino, eland, giraffe
   GRAZER: zebra, antelopes
   (gazelles = both browser and grazer; buffalo occasionally browse)

8. List two animals that you expect to see in the park or that you saw in the park. Describe two features that would help you to identify each animal. *(1 pt each, 6 total)*

	ANIMAL	FEATURE
a.		
b.		

9. List two forms of land use around Nairobi National Park and the effect of the land use on the park. *(1 pt each, 4 total)*

LAND USE	EFFECT OF LAND USE ON PARK
e.g. farming, housing, forest, recreational areas, wetland, airport, transport, industry, protected area	

10. List two environmental threats facing the Nairobi National Park. What action can you as an individual or group take to reduce these threats?
(2 pts each for threat, 1 pt each for action. 6 total)

11. State two ways that wildlife is useful to humans. *(1 pt each)*

PRETEST AND POSTTEST NAIROBI NATIONAL PARK ECOLOGY PROGRAM
Primary school students

Name
School Class
Have you ever visited Nairobi National Park?

1. What are two habitats in the Nairobi National Park? For each habitat, name one plant found in that habitat.
   (2 pts for habitat, 1 pt for plant, 6 total)

	HABITAT	PLANT FOUND IN THAT HABITAT
a.		
b.		

2. What is an adaptation? Give one example of a plant or animal adaptation in Nairobi National Park.
   (2 pts for adaptation, 2 pts for example)

3. Make a list of 2 exotic and 2 indigenous trees found in Nairobi National Park.
   (1 pt each, 4 total)

	EXOTIC	INDIGENOUS
a.		
b.		

c. What is the difference between exotic and indigenous trees? *(2 pts)*

4. List two habitats found in Nairobi National Park. Name one animal found in each habitat.
   (1 pt each, 4 total)

	HABITAT	ANIMAL FOUND IN THAT HABITAT
a.		
b.		

5. Name at least two different types of trees found in Nairobi National Park.
   (1 pt each, 2 total)

6. A zebra is a herbivore. What does it eat? _____ *(2 pts)*
   A lion is a carnivore. What does it eat? _____ *(2 pts)*
   A marabou stork is a scavenger. What does it eat? _____ *(2 pts)*

7. Name one browsing animal and one grazing animal in the park. *(1 pt each, 2 total)*

BROWSER _____
GRAZER _____

8. List two animals you expect to see in the park or that you saw in the park. Describe two features that would help you to identify each animal. *(1 pt each, 6 total)*

	ANIMAL	TWO FEATURES OF THAT ANIMAL
a.		
b.		

9. List one form of land use around Nairobi National Park. Is this land use good or bad for the park? Explain your answer. *(4 pts land use, 2 pts explanation)*

LAND USE	GOOD OR BAD FOR PARK? EXPLAIN

10. List one problem facing Nairobi National Park. What can you do about this problem?
(4 pts problem, 2 pts action)

11. Wildlife has many uses to humans. *(1 pt each, 2 total)*
    Wildlife gives us _____ and _____.

NAIROBI RALLY 1998
SURVEY RESULTS

The Nairobi Rally on Community Participation in Conservation was held at Githunguri Township Primary School on March 7th 1998. As one measure to evaluate the rally, a survey was conducted with 50 students. The students were selected randomly among those attending the rally. The majority of secondary and primary school students were able to answer the questions independently. However for some primary school students, a WCK staff member conducted verbal surveys in Kiswahili if the students had difficulties understanding the written questions. The following summary presents the results of the survey. All students surveyed were WCK members.

N= 50 students
Female = 18, Male = 32
Primary School Students = 31, Secondary School = 18, Tertiary School = 1
Average No. of years in WCK = 2.78 years

1. What did you like most about the rally?

RESPONSE	NO. OF RESPONDENTS
Poems	9
Dances/dancing	8
Songs	5
Presentations were educational/ had a lot of information	5
Planting trees	4
Participation of club members	4
Many schools attending	3
Meeting other students	3
Speeches	3
Well-organized	3
Entertainment	2
We were able to express our solutions to problems	2
Presentations	2
I have visited a totally different environment from where I live	1
Messages about plastic bags	1
Presentations on wildlife	1
People were well-behaved	1

2. What did you like least about the rally?

RESPONSE	NO. OF RESPONDENTS
Noise by students/students' behavior	10
Nothing/rally was interesting	7
Combination of primary & secondary schools/ fewer primary schools than secondary/separate prim & sec next time	5
Songs	3
Poor time management	2
Congestion in the hall	2
The way students scattered rubbish in the compound	2
Songs that did not concentrate on wildlife, e.g. pop songs	2
Dancing	2
Programme too long	1
Poor road to the venue	1
Few schools attending	1
Timing of the rally	1
Pronunciation of words	1
Costumes	1
The programme	1
The way our school was abused by the Hindus	1

3. What are your suggestions for improving the rally?

RESPONSE	NO. OF RESPONDENTS
Minimize the noise by participants	5
Separate the primary & secondary schools for rallies	5
Plant more trees/teach others about conservation/pollution	5
Hold rally in a bigger hall	4
Invite as many secondary schools & colleges as possible	4
Have more members, students participate	3
Have different members of community participate	2
Hold more rallies	2
Give students magazines/literature to take with them	2
Prepare songs & placards for parade	1
Hold rally in a more central location	1
Increase the number of songs	1
More shairis	1
More awards	1
More plays	1
Try to organize transport for schools	1
I didn't feel shy when I was singing	1
Include games like football	1
Teach others to plant trees	1

4. What are 3 ways the community can be involved in conservation?

RESPONSE	NO. OF RESPONDENTS
Planting trees	25
Stop killing wildlife/stop poaching	13
Collecting garbage/rubbish	12
Conservation of environment/wildlife/animals	11
Avoid cutting trees	11
Educating community/encourage others in conservation	10
Avoid pollution	8
Recycling	4
Sharing ideas within the community	4
Care for animals	3
Don't use plastic bags/use baskets	3
Prevent soil erosion	3
Conserve water	2
Organizing rallies for community	2
Build latrines/use toilets properly	2
Encourage community to use the skills they have	1
Be a member of WCK	1
Have more national parks & reserves	1
Planning seminars	1
Demonstrating	1
Individuals should act with the community	1
Unity in work	1
Volunteers	1
Start self-help & income generating projects	1
WCK should have a road show to educate community	1
Community health	1
Show benefits of conservation to community, people are not interested if monetary benefits are low	1

5. What was the most important thing you learned today about community participation in conservation?

RESPONSE	NO. OF RESPONDENTS
Conservation of trees/planting trees	11
Ways to conserve the environment	7
Animals/wildlife should be conserved	6
When everyone participates, we can be successful	6
Caring for animals	4
Conservation is for us all/ for our future/our heritage	4
Garbage (Keeping our community clean, Nairobi has become a city of garbage, community can collect garbage instead of waiting for city council)	3
Using baskets instead of plastics	3

Students can take care of the environment	3
Digging rubbish pits	3
Interaction with other youth/WCK members	2
Avoiding soil erosion/building terraces	2
Being of any age, you can participate in conservation	2
How to encourage the community to participate	1
Wildlife should be protected	1
Stop killing animals	1
I'll encourage community around us not to cut trees for charcoal & whenever they cut a tree to plant one.	1
"We should work together as one, no matter what the consequences. Spare time, even if a paper is seen on the ground, one must collect it."	

ANALYSIS OF NAIROBI RALLY PRESENTATIONS 1998

The Nairobi region rally on community participation in conservation included presentations of songs, poems, raps and drama. The evaluation of the event included an analysis of the content of the presentations, as a measure of the students' knowledge and attitudes. During the presentations, the WCK education officer and two action group officials recorded the content presented on the scoring sheets developed for the rally. Of particular interest to WCK was whether or not the songs & poems reflected the 1998 theme of community participation in conservation.

A total of 49 presentations were made (Poems/shairis = 26, songs = 15, dances = 5, skits/drama = 3). The following results summarize the content presented. (Note: some presentations included more than one concept or idea, which is reflected in the totals.)

Content	# of items including content
Garbage/pollution/plastic bags	10
Environmental health/sanitation	4
Community working together for conservation	8
Conservation of trees/tree planting	8
Content irrelevant to theme/conservation (e.g. entertainment)	8
Conservation of environment/importance of conservation	7
Conservation of wildlife/protect wildlife	7
Poaching	3
Importance of wildlife tourism	3
Indigenous culture (e.g. Masaii dances)	3
Heritage of Kenya	3
Other (soil erosion, El Nino, Komba magazine)	4

The results from this analysis and the following pie chart reflect the environmental priorities of WCK members, with 22% of the presentations dealing with pollution, garbage, and plastic bags. This focus on pollution contrasts with the emphasis of WCK members in the 1970s and early 1980s on anti-poaching messages.

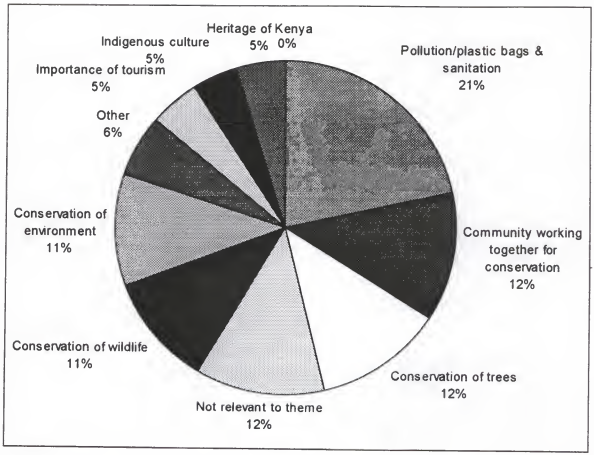


Figure A-1. Content analysis of presentations at 1998 Nairobi Rally

QUESTIONNAIRE FOR WCK RALLY PARTICIPANTS
COMMUNITY PARTICIPATION IN CONSERVATION 1998

The Wildlife Clubs of Kenya would like to get your opinions about the WCK rally this year. Please take a few minutes to answer these questions. Your opinions are important to us! Thank you so much.

Name: _____

School/institution name and address: _____

Gender: Male ____ Female ____

Type of participant: (TICK)

Primary school student ____ Teacher ____
Secondary school student ____ Adult community member ____
Tertiary school student ____ Other (describe) ____

If youth, are you a member of WCK? YES ___ NO ___
No of years in WCK? ____ years

1. What did you like most about the rally?

2. What did you like least about the rally?

3. What are your suggestions for improving the rally?

4. What are three ways that the community can be involved in conservation?

5. What was the most important thing you learned today about community participation in conservation?

APPENDIX B
RESULTS FROM ECOLOGY PROGRAM EVALUATION AND TRAINING SESSIONS

Results from Evaluation of Ecology Program in Nairobi National Park

A pretest and posttest consisting of 11 questions was designed to assess knowledge and attitudes toward conservation of Nairobi National Park. Both the secondary school and primary school tests were pretested, and ambiguous questions removed. The total possible score on the test was 50 points. The students completed the pretests before beginning the Ecology program and the posttest immediately after the program during a period from May 1998-July 1998. The post-hoc reliability coefficient for the primary school instrument was 0.78 and 0.62 for the secondary school instrument using Guttman split-half analysis (SPSS 1997).

The 86 secondary school students represented 3 secondary schools in the Nairobi region. The students included 60 males and 26 females from the following classes: Form 1 (n=9); Form 2 (n=19); Form 3 (n=37); Form 4 (n=21). The 165 primary school students represented 7 primary schools in the Nairobi region. The primary school students included 77 males and 88 females from the following classes: Standard 4 (n=1); Standard 5 (n=4); Standard 6 (n=31); Standard 7 (n=61); Standard 8 (n=68). The results from paired t-tests reveal significant learning gains for both secondary and primary students participating in the Ecology program.

Results from evaluation of Ecology program in Nairobi National Park

	N	Mean	SD	T	p
Secondary					
PRE	86	12.37	6.44	22.16	0.0001*
POST	86	29.25	8.37		
Primary					
PRE	165	13.09	9.54	17.70	0.0001*
POST	165	23.04	11.49		

Results from Training Sessions

1. Why evaluate? What happens if we don't evaluate? Results from 7 workshops

Why evaluate?	S*	A	C	R.V.	M	N	W	%
• **To assess achievement of goals & objectives**	X	X	X	X	X	X	X	100%
• **To discover weaknesses and improve them**	X	X	X	X	X	X	X	100%
• **To determine success and failure of projects**	X	X	X	X	X	X	X	100%
• To guide planning and decision-making	X	X	X	X	X	X		86%
• To maintain standards	X	X				X		43%
• Documentation for donors & stakeholders	X	X		X				43%
• To assess use of resources and funding	X			X	X			43%
• To identify feedback from others						X	X	29%
• To expand effective programs					X			14%
What happens if we don't evaluate?								
• **Cannot tell if objectives met**	X	X	X	X	X	X	X	100%
• **Cannot identify failures and correct them**	X	X	X	X	X	X	X	100%
• Can lead to misuse or waste of resources	X	X	X	X	X	X		86%
• Donors and stakeholders may lose confidence		X	X	X	X			57%
• Difficult to plan for future	X			X			X	43%
• May assume success with no evidence		X	X			X		43%
• Lead to lack of motivation in organization	X						X	29%
• Lack of feedback about programs from stakeholders	X							14%
• Cannot justify continuity of programs								

* S = Staff, A = Action Group, C = Coast, R.V. = Rift Valley, M = Meru, N = Nairobi, W = Western

2. Comparison of participatory and conventional evaluation: Results from 7 workshops

Conventional evaluation	Participatory evaluation
WHO Donors (*43%, n=3) Outsiders (86%, n=6)	**WHO** Project stakeholders (100% n=7)
WHAT End product (100%, n=7) Accountability/finances (57%, n=4) Achievements (29%, n=2) Shortcomings of project (14%, n=1)	**WHAT** Planning, process, and products (57%, n=4) Success and failures (43%, n=3) Areas for improvement (29%, n=2)
HOW Short-term site visits (86%, n=6) Reports/records (86%, n=6) Interviews (71%, n=5) Questionnaires (29%, n=2)	**HOW** Interviews (86%, n=6) Questionnaires (86%, n=6) Long-term observation (71%, n=5) Discussions (43%, n=3) Community meetings (43%, n=3) Art/drama (29%, n=2) Records (29%, n=2)
WHEN End of project (100%, n=7)	**WHEN** Continuous (100%, n=7)
WHY Accountability/documentation (100%, n=7) Maintain standards (14%, n=1)	**WHY** Measure effectiveness (100%, n=7) Improve programs (86%, n=6) Motivate stakeholders in projects (71%, n=5) Document impacts (57%, n=4) Enhance sustainability of programs (14%, n=1)

* % refers to percentage of workshops (N=7) recording each response

3: Recommendations and lessons developed from fieldwork: Sample results from workshop

RECOMMENDATIONS FOR NATURE TRAIL	LESSONS LEARNED
• The nature trail proved to be effective as a learning resource from this evaluation, and should be extended to schoolyards. • The path on the nature trail is narrow, making it difficult to hear the facilitator at times. The path should be made wider to improve the learning process. • One method of addressing this problem may be to have small groups engaged in active learning tasks, such as hands-on activities, which would also improve learning. • The pollution on the nature trail should be cleaned or barriers such as fencing constructed to block human activity on the trail.	• All the data collection tools provided important information in evaluation of the nature trail. • Mapping was not suitable for assessing achievement of all the objectives and should be used in conjunction with other data collection tools. • Interviews are an appropriate tool for collecting suggestions and open responses from participants. • Before any evaluation task, it is necessary to provide clear instructions to students.

4. Additional analyses for pretests and posttests for trainings

a. Summary data and analysis of variance: posttest scores of training groups (N=120)

Training	N	Mean	SD
1. Action group	17	43.12	4.91
2. Staff	10	42.50	5.13
1. Meru	11	40.36	3.75
4. Coast	29	39.66	6.86
5. Nairobi	19	38.68	7.37
6. Western	15	36.87	7.81
7. Rift Valley	19	35.52	5.63
Total	120	39.29	6.62

Source	ss	df	ms	F	p
Between groups	732.85	6	122.14	3.08	0.008*
Within groups	4481.94	113	39.66		
Totals	5214.79	119			

b. Post hoc comparisons for posttest scores among training groups

	S	A	M	N	C	W	R.V.
S	X	ns	ns	ns	ns	0.031*	0.005*
A		X	ns	0.037*	0.075	0.006*	0.0001*
M			X	ns	ns	ns	0.045*
N				X	ns	ns	ns
C					X	ns	0.028*
W						X	ns
RV							X

S=Staff, A = Action group, M = Meru, N = Nairobi, C = Coast, W = Western, RV = Rift Valley

Significant differences reported at $p \leq 0.05$. P-values reported for $p \leq 0.10$.

c. Summary data and analysis of variance: posttest scores among positions (N=120)

Position	N	Mean	SD		
1. Staff	10	42.50	5.12		
2. Secondary teachers	67	40.84	5.15		
3. Primary teachers	32	36.34	7.65		
4. Community members	11	35.55	8.44		
Total	120	39.29	6.61		
Source	ss	df	ms	F	p
Between groups	695.15	3	231.72	5.95	0.001*
Within groups	4519.64	116	38.96		
Totals	5214.79				

d. Post hoc comparisons for posttest scores among positions

	Staff	Secondary	Primary	Community
Staff	x	ns	.007*	.012*
Secondary		x	.001*	.010*
Primary			x	ns
Community				x

Significant differences reported at $p \leq 0.05$. P-values reported for $p \leq 0.10$.

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BIOGRAPHICAL SKETCH

Mallory DeVane McDuff was born in 1966 and grew up in Fairhope, Alabama. She attended Vanderbilt University where she received her Bachelor of Science in human biology and English in 1988. After graduation, she worked as a journalist in Alabama and then spent three years in the U.S. Peace Corps in the Central African Republic (CAR). While in CAR, she worked for two years as a biology teacher in the village of Dekoa and one year with World Wildlife Fund as environmental education coordinator in the Dzanga-Sangha reserve.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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